INSIGNIA SOLUTIONS

Version 2.0

Run Windows

Installation & User's Guide

On Power Mac

Includes Microsoft Windows 3.11 and MS-DOS 6.22

SoftWindows™ for Power Macintosh

Runs All Your Windows Applications On Power Mac. Guaranteed!

INSIGNIA SOLUTIONS

Installation and User's Guide

SoftWindows for Power Macintosh

Version 2.0

SoftWindows™ Installation and User's Guide

Call today and save money on other great products from Insignia Solutions.
In USA/Canada: 1-800-848-7677
In Europe: +44 131 458 6849

The Insignia Solutions Family Of Software Products

Insignia Solutions software enables you to run Windows® applications on your Macintosh or Power Macintosh. And our utilities make using floppies and CD-ROMs simple and fast. All of which makes using your computer easy, and helps make you more productive. So place your order today. Because great products and huge savings are just a phone call away.

Run All Windows Applications On Your Power Mac: SoftWindows™ 2.0 For Power Macintosh

With Power Macintosh, there's nothing you can't do. And that includes running all Windows and DOS applications. On any Power Mac computer, SoftWindows 2.0 for Power Macintosh is the #1 way to access Windows, DOS, and network-based applications. Includes Microsoft Windows 3.11, MS-DOS 6.22, and NetWare and LAN Manager client software.

Get Two Computers In One: SoftWindows 1.0 For Macintosh

SoftWindows 1.0 for Macintosh gives you the power to access standard mode Windows and DOS applications and PC networks instantly. It's like having a Windows computer inside your Macintosh, just a double-click away. Includes Microsoft Windows 3.1, MS-DOS 6.21, and NetWare client software.

Perfect For The Family: SoftWindows 1.0 For Performa

When it's time to take your PC-based work home, SoftWindows for Performa makes it easy to run the standard mode Windows and DOS applications you need on your family computer. Your family will love running Windows programs, educational applications and more! Runs on both the PowerPC and 030/040-based Performa computers. Includes Microsoft Windows 3.1 and MS-DOS 6.21.

For The DOS Pro, It's SoftPC® Professional

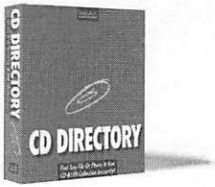
Run thousands of text-based DOS applications, programs that use extended and expanded memory, and DOS applications with VGA graphics on your 020, 030 or 040 Macintosh or PowerBook. Includes MS-DOS 5.0 and NetWare client software pre-installed.

Run DOS Applications On Your Mac With SoftPC

Now you can run text-based DOS applications anytime on Macintosh computers. SoftPC even works on your Macintosh Classic or Macintosh Plus. In a window right alongside your Macintosh applications, SoftPC gives you the flexibility of DOS anytime. Includes MS-DOS 5.0 pre-installed.

Power At Your Fingertips: CD Directory™

With CD Directory, it's easy to find, manage, and retrieve files from your entire CD-ROM library, even when the CD you want isn't loaded. CD Directory catalogs all the files and images on your CDs automatically.

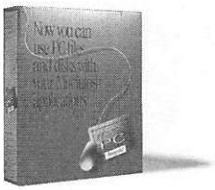


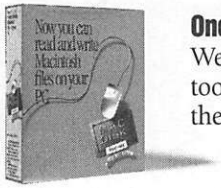
Break Speed Records With RapidCD™

Crank up the performance of any CD-ROM by as much as 300%! With a click of your mouse, RapidCD speeds up file retrieval, disk access, and searches simply and effectively.

Fast And Easy, AccessPC®

Mount PC disks loaded into your Mac's SuperDrive, Bernoulli or SyQuest without a single keystroke or mouse click. AccessPC also translates files to RTF, ASCII, and more.





One Great Program Deserves Another: MacDisk For The PC™

We did it for your Macintosh and we'll do it for your PC, too. MacDisk lets you open disks, copy files, even send them back to the Mac platform with just a few clicks.

SoftWindows for UNIX is also available for HP, DEC, IBM, Motorola, SGI, Siemens-Nixdorf, Sun/SPARC and NEXTSTEP workstations. Contact our sales department at (508) 682-7600 for more information.

INSIGNIA SOLUTIONS.

Insignia and Insignia Solutions are registered trademarks of Insignia Solutions Inc. SoftWindows is a trademark used under license.
Microsoft, Windows and MS-DOS are registered trademarks of Microsoft Corporation. Mac, the Mac OS logo, Power Mac and Power Macintosh are trademarks, and Apple and Macintosh are registered trademarks of Apple Computer, Inc. All other trademarks are the property of their respective holders.
© 1995 Insignia Solutions Inc. All rights reserved. Specifications subject to change without notice.

Unbeatable Technical Support–The Response Program

At Insignia Solutions, we offer a technical support program that's second to none. When you sign up for a Response program, you can get unlimited toll-free phone support for a year, and fax and e-mail support, too. Plus you get online technical bulletins that are loaded with helpful hints. There's also our automated Fax Back Service available to you 24 hours a day, 7 days a week.

What's more, you receive priority access to senior tech support reps and the fastest response time around. As a bonus, you can get discounts on future upgrades.

Insignia Solutions. Great technical support, every time.

In USA/Canada, call 1-800-848-7677

In Europe, call +44 131 458 6849

SoftWindows™ Installation and User's Guide

This guide refers to version 2 of SoftWindows for Power Macintosh

Please remember to return your Warranty Registration Card (refer to page 191).

Copyright and acknowledgments

© Copyright 1995 Insignia Solutions. All rights reserved.

The SoftWindows™ software and this documentation are copyright materials. Making unauthorized copies is prohibited by law. No part of the SoftWindows software or documentation may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, without the prior written permission of Insignia Solutions.

The InsigniaLQ TrueType™ and InsigniaLQ BitMapped fonts are derived from PIXymbols™ 2107, a bitmapped representation of the IBM Extended Character Set, and from an associated PostScript file, both supplied by Page Studio Graphics, 3175 North Price Road, #1050, Chandler, AZ 85224 tel (602) 839-2763. PIXymbols™ is a trademark of Page Studio Graphics, who are copyright owners of PIXymbols™ 2107 and the associated PostScript file. A PostScript version of the same font is available from Page Studio Graphics.

Insignia Solutions specifically retains title to all Insignia computer software. The software described in this guide is furnished under a license agreement and may only be installed, used, or copied in accordance with the terms of that agreement.

Notice to US Government End Users
Restricted Rights Legend

For units of the Department of Defense:

Use, duplication, or disclosure by the Government is subject to restrictions as set forth in paragraph (c)(1)(ii) of the Rights in Technical Data and Computer Software Clause at DFARS 252.227-7013 (May 1987) or equivalent.

For civilian agencies:

Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraphs (a) through (d) of the Commercial Computer Software - Restricted Rights Clause at 52.227-19 of the Federal Acquisition Regulations.

Insignia Solutions Inc., 1300 Charleston Road
Mountain View, CA 94043.

SoftPC, AccessPC, and SoftNode are registered trademarks of Insignia Solutions.

SoftWindows is a trademark used under license.

WinSleuth Professional is a trademark of Omega Logic, Inc. WinPost is a trademark of Eastern Mountain Software. Novell and NetWare are registered trademarks of Novell Inc. MS-DOS, Microsoft, and Windows are registered trademarks of Microsoft Corp. QBASIC is a trademark of Microsoft Corp. IBM is a registered trademark of International Business Machines Corp. IBM PC, IBM PC/AT, and PowerPC are trademarks of International Business Machines Corp. Apple, the Apple logo, AppleTalk, AppleShare, EtherTalk, ImageWriter, and Macintosh are registered trademarks of Apple Computer, Inc. Finder, Power Macintosh, and TrueType are trademarks of Apple Computer, Inc.

All other product names are trademarks or registered trademarks of their respective owners.

Various trademarks and registered trademarks are referred to in this document. Such references do not imply any endorsement of, or other affiliations with, this guide. Where trademarks or registered trademarks are referred to, every effort has been made to adhere to the holder's preferred style of spelling and capitalization.

The information in this guide is believed to be correct as of the date of publication. However, it is subject to change without notice, and does not represent a commitment on the part of Insignia Solutions.

INSIGNIA'S LICENSOR(S) MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, REGARDING THE SOFTWARE. INSIGNIA'S LICENSOR(S) DOES NOT WARRANT, GUARANTEE OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE OF THE SOFTWARE IN TERMS OF ITS CORRECTNESS, ACCURACY, RELIABILITY, CURRENTNESS OR OTHERWISE. THE ENTIRE RISK AS TO THE RESULTS AND PERFORMANCE OF THE SOFTWARE IS ASSUMED BY YOU. THE EXCLUSION OF IMPLIED WARRANTIES IS NOT PERMITTED BY SOME STATES. THE ABOVE EXCLUSION MAY NOT APPLY TO YOU.

IN NO EVENT WILL INSIGNIA'S LICENSOR(S), AND THEIR DIRECTORS, OFFICERS, EMPLOYEES OR AGENTS (COLLECTIVELY INSIGNIA'S LICENSOR) BE LIABLE TO YOU FOR ANY CONSEQUENTIAL, INCIDENTAL OR INDIRECT DAMAGES (INCLUDING DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION AND THE LIKE) ARISING OUT OF THE USE OR INABILITY TO USE THE SOFTWARE EVEN IF INSIGNIA'S LICENSOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. BECAUSE SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATIONS MAY NOT APPLY TO YOU. Insignia's Licensor's liability to you for actual damages from any cause whatsoever, and regardless of the form of the action (whether in contract, tort (including negligence), product liability or otherwise) will be limited to $50.

This guide was designed and produced by
Human-Computer Interface Limited, Cambridge, England.

Contents

Introduction **1**
What is SoftWindows? 2
Requirements 3
New features and enhancements 4

Installing SoftWindows **5**
Installing the SoftWindows files 6
Registering SoftWindows 11
Installing additional SoftWindows options 15
Upgrading an existing hard disk file 17
Setting up SoftWindows for multiple users 19
Setting up Windows for Workgroups 20

Tutorial **25**
Installing the Windows application WinPost 26
Running a Windows application 28
Printing from a Windows application 30

Using SoftWindows **31**
Running SoftWindows 32
Running Windows 33
Using the MS-DOS window 35
Getting help with using SoftWindows 36
Using the keyboard and mouse 39
Copying and pasting text in MS-DOS 41
Copying and pasting text and graphics in Windows 42
Playing sound from Windows 44
Windows basics 46
Installing and running Windows applications 47
Connecting to a NetWare file server 49

Printing from SoftWindows **51**
Printing 52
Printing from Windows applications 53
Printing from MS-DOS applications 55

Setting up SoftWindows **57**
Using the Setup menu 58
Setting up disk drives 59
Setting up floppy disk drives 60
Setting up hard disk drives 61
Creating new hard disk files 63
Moving PC files to and from the Macintosh 65
Setting up CD-ROM drives 67
Setting up memory 68
Setting up the Windows desktop 70
Using modems and other serial devices 72
International usage 75
Improving the performance of SoftWindows 78

SoftWindows commands **79**
Menus 79

Using MS-DOS **115**
Getting started 115
Installing and running MS-DOS applications 118
MS-DOS commands 120
MS-DOS configuration 125
Editing configuration files 127

Networking with SoftWindows **129**
Using networking packages 130
Using ODI networking software 133
Using NDIS networking software 137
MacTCP, Novell TCP/IP, and Winsock 138

Using Novell NetWare **141**
Setting up Novell NetWare 141
Running Novell NetWare 143
Using a LocalTalk gateway 144
Using MacIPX 148

Using Microsoft LAN Manager **151**

Scripting SoftWindows **155**
Using scripting 155
Scripting reference 158

Troubleshooting **165**
Common problems 165
MS-DOS errors 169
SoftWindows shared drive errors 170
SoftWindows errors 171
SoftNode errors 178

Specification **181**
General specification 181
Networking specification 182

Glossary **183**

Technical support **189**
Technical support contacts 190

Software registration **191**
Media replacement 191
Product upgrades 191

Index **193**

Conventions

For clarity this guide uses the following typographical conventions:

This style	*Refers to this*
COMPUTER	Anything you type, exactly as it appears.
bold	Names of items that appear on the screen.
↵	Return or Enter key.
⌘, Esc...	Other special keys on the keyboard.
italics	References to other sections of the guide.

The following symbols identify special instructions:

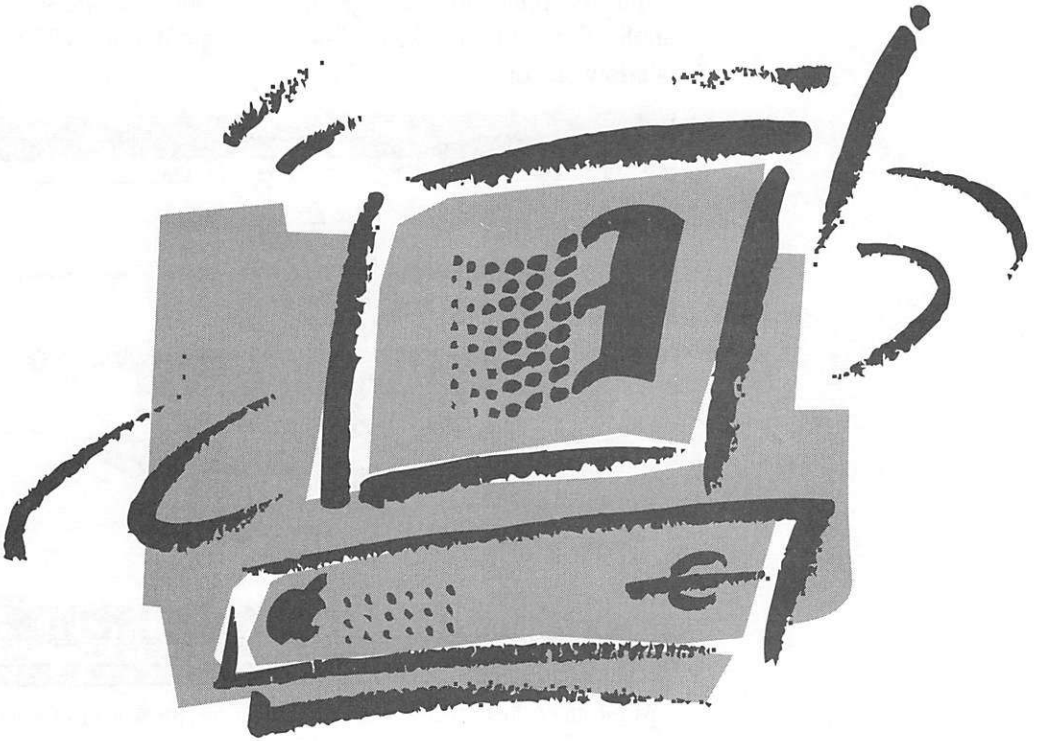
This symbol	*Refers to this*
➤	A step in a procedure.
■	An item in a list of alternatives.
■	Important information.

Abbreviations

This guide uses the following abbreviations:

This abbreviation	*Refers to this*
Insignia	Insignia Solutions.
MS-DOS	Microsoft Disk Operating System for the IBM PC.
Windows	Microsoft Windows 3.11.
Macintosh	A PowerPC processor-based Macintosh computer.
PC	An IBM PC or compatible computer.

Introduction

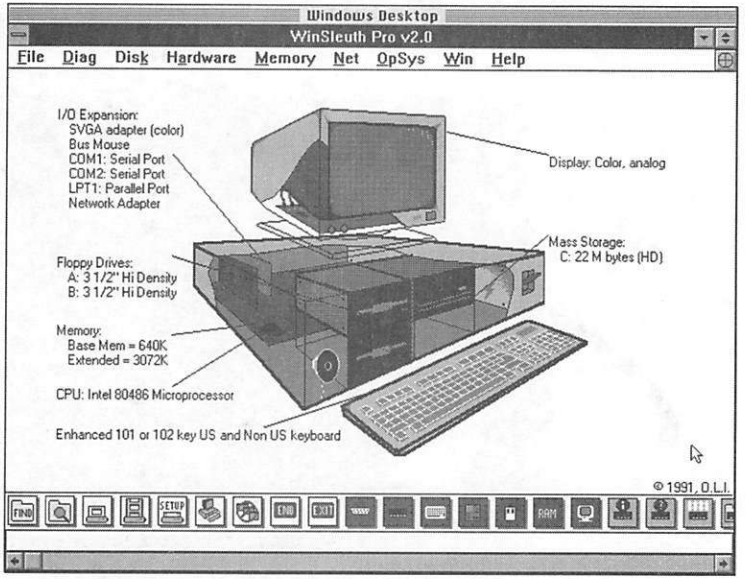


Welcome to SoftWindows, the software that allows you to run PC applications on your Power Macintosh.

Read this chapter for a quick overview of the features of SoftWindows, and then turn to *Installing SoftWindows*, page 5, to get started.

What is SoftWindows?

SoftWindows extends the versatility of your Macintosh by enabling you to run PC programs, including MS-DOS and Windows applications, alongside your existing Macintosh applications. It is just like having a complete Windows PC in a window on your screen.



WinSleuth Pro for the IBM PC, by Omega Logic Inc, running on a Macintosh using SoftWindows

486 compatibility

SoftWindows emulates an IBM 486 PC or compatible, allowing you to run all current-generation Windows applications. It gives the same performance as you would expect from a PC, and the faster your Macintosh the faster the performance of SoftWindows.

Full integration

SoftWindows is seamlessly integrated with your Macintosh. It includes clipboard linking to let you copy and paste text and graphics between Macintosh and Windows or MS-DOS applications.

Moving data between your PC and Macintosh applications is no problem using the SoftWindows built-in file sharing. In addition,

your PC programs can make use of your Macintosh peripherals, including your floppy disk drive, CD-ROM drive, sound, mouse and keyboard, serial ports and printers, and network.

Networking

SoftWindows is fully network aware, and can take advantage of your Macintosh Ethernet, Token Ring, or LocalTalk connection to access other PCs on your network. SoftWindows includes Novell NetWare and LAN Manager client software. In addition, it supports most other network packages including Windows for Workgroups, Banyan VINES, DEC PATHWORKS, LANtastic, and TCP/IP packages such as Novell's LAN WorkPlace for DOS. You can also access Windows NT Advanced servers by using standard LAN Manager software.

Easy to use

SoftWindows is easy to use, in most cases easier than using a real PC. Many changes that would require a hardware change on a PC can be made simply by choosing an appropriate command from the SoftWindows menus.

If you are not already familiar with PCs this guide includes brief introductions to MS-DOS and Windows to help you get started. If you get stuck you can use the SoftWindows Apple Guide help or Balloon Help to tell you what you need to do.

Requirements

The following table summarizes the requirements for SoftWindows:

Feature	*Requirements*
Macintosh	Any Power Macintosh.
System	System 7.1.2 or later.
Application memory size	Minimum: 8 Mbytes. Recommended: 12/17 Mbytes (16/24 Mbyte Macintosh).
Hard disk space	38 Mbytes for default installation.

New features and enhancements

This section lists the new features and enhancements to SoftWindows version 1:

486 compatibility

SoftWindows 2 now provides emulation of the 486 processor, allowing you to run all current-generation Windows applications, including those that require Enhanced mode.

Improved graphics support

SoftWindows now supports Super VGA graphics, a standard used by many MS-DOS applications.

Windows sound support

SoftWindows 2 allows you to record and play back digital sound samples in the standard Windows waveform format. For example, you can run multimedia presentations that include digitized sound.

Scriptability

SoftWindows can now be controlled using AppleScript. For example, you can write a script to run SoftWindows, run an MS-DOS application, and then read information displayed by that application.

Apple Guide

SoftWindows now includes Apple Guide Help, to provide a step-by-step guide to using each of the main features of SoftWindows. Note that you need System 7.5 or later to use Apple Guide.

Automatic upgrading

SoftWindows will now automatically update a hard disk file created by an earlier version of SoftWindows or SoftPC, and during installation will build a new hard disk file containing your existing Windows and MS-DOS applications and files.

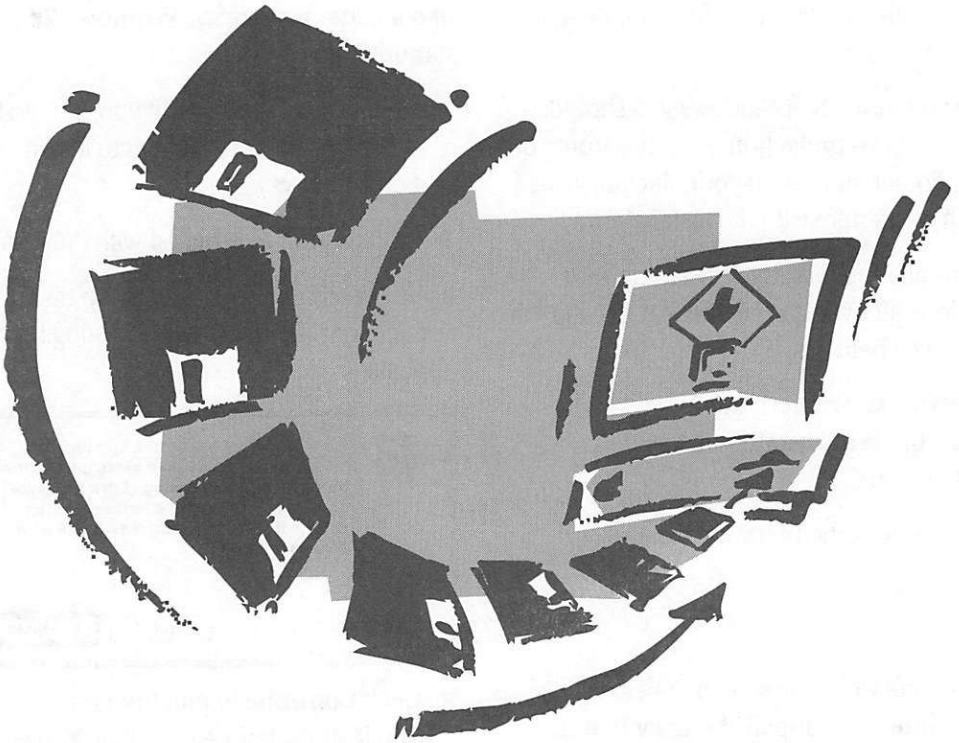
Hard Disk Expander

SoftWindows now includes a Hard Disk Expander utility, to allow you to expand the size of existing hard disk files.

Improved networking

SoftWindows now provides simultaneous Macintosh and PC IPX and TCP/IP networking support for both Ethernet and Token Ring networks.

Installing SoftWindows



This chapter describes how to install SoftWindows on your Macintosh, and how to set it up to run MS-DOS and Windows applications.

SoftWindows and its associated files are supplied on a CD-ROM, or a set of installation disks. Most files are supplied in a compressed format and should be installed as described on the following pages.

Note that you will need about 38 Mbytes of free disk space to install SoftWindows.

Installing the SoftWindows files

SoftWindows includes an installer which automatically installs all the files you need to run SoftWindows.

Before you install SoftWindows you should remove all virus protection programs from your System Folder and restart your Macintosh, as these may interfere with the installation.

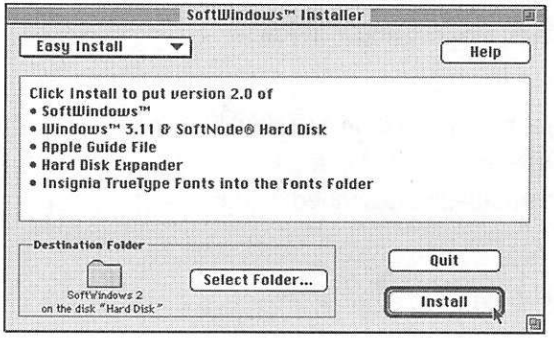
If the installation fails, try reinstalling with extensions off by restarting the Macintosh with the Shift key held down.

1 Run the installer

➤ Insert the **Win Install 1** disk or the installation CD-ROM.

➤ Double-click the **Installer** icon.

➤ When the welcome screen appears click **Continue...** to display the **Easy Install** dialog box.

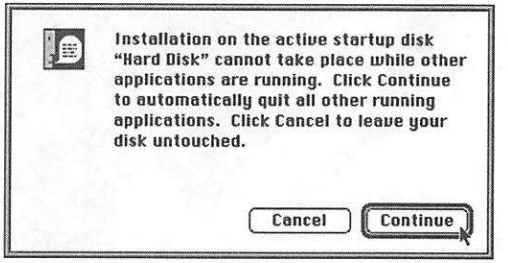


By default, the installer will install SoftWindows into a folder named **SoftWindows 2** on your startup disk.

➤ Click **Select Folder...** if you want to specify a different folder in which to install SoftWindows.

➤ Click **Install** to proceed with the installation.

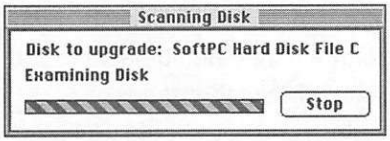
If you are installing on the startup disk, and applications are running, this dialog box appears:



➤ Click **Continue** to quit from other applications before installing. You will be prompted to save your work if necessary.

➤ Follow the installation instructions displayed on the screen, changing disks as requested.

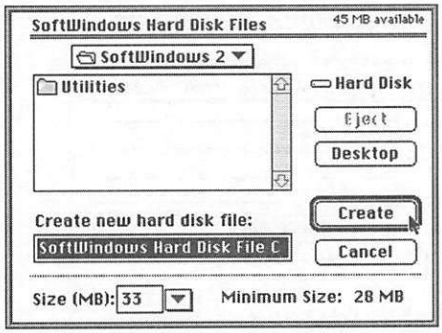
If you are upgrading from an earlier version of SoftWindows or SoftPC, and you have an existing hard disk file, the installer checks for your existing applications:



Refer to *Upgrading an existing hard disk file*, page 17, for information on how to proceed.

2 Create a hard disk file

This dialog box then appears, allowing you to create a file to act as the hard disk for SoftWindows:



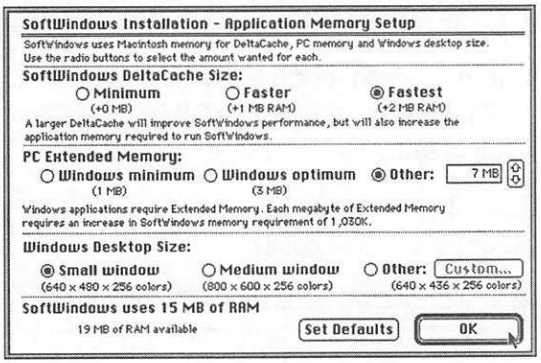
By default, the hard disk is created with the name **SoftWindows Hard Disk File C** and a size of 33 Mbytes, which is sufficient for MS-DOS and Windows.

However, if you want to install other applications for either MS-DOS or Windows you will probably need to increase the size. Refer to the user guides for the applications you want to install for help in choosing the size of file you need.

- ➤ Choose the size for the hard disk file from the **Size** pop-up menu.
- ➤ Click **Create** to create the hard disk file.

3 Set up memory for SoftWindows

The installer then displays this dialog box to allow you to set up the amount of memory allocated to SoftWindows, and the size of the Windows desktop:



As you select the options you want, the total amount of memory SoftWindows will need is shown at the bottom of the dialog box. You will be warned if there is not enough memory in your Macintosh.

Setting the **SoftWindows DeltaCache Size** to **Minimum** or setting a large **Windows Desktop Size** will significantly reduce the performance of SoftWindows.

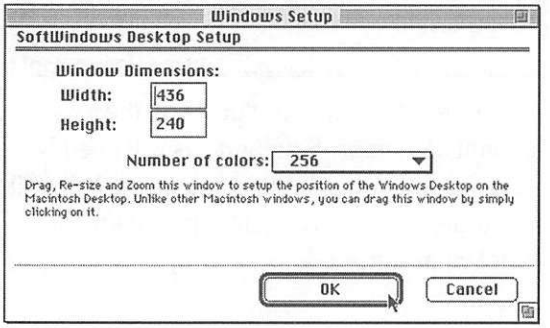
The following table shows suggested settings for different requirements:

Option	*For minimum memory:*	*For best performance:*
SoftWindows DeltaCache Size	Minimum	Fastest
PC Extended Memory	Windows minimum	Windows optimum
Windows Desktop Size	Small window	Small window

➤ Choose the setting you want for each option.

➤ If you want to specify a different size for the Windows desktop choose **Other** and click **Custom...**.

This dialog box then allows you to specify the size and number of colors:



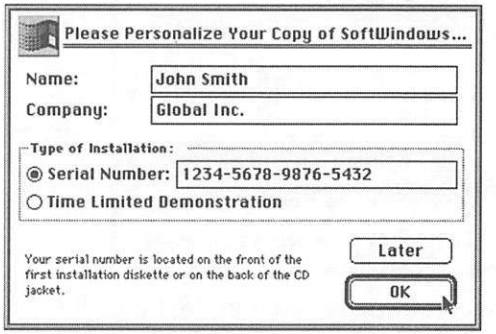
The values you choose determine the initial settings for SoftWindows but you can change them later if you want; refer to *Setting up the Windows desktop*, page 70.

For best performance your Macintosh **Monitors** control panel should be set to 256 or 16 colors, rather than thousands or millions of colors, and you should use the same setting in the **Windows Setup** dialog box.

➤ When you have chosen the settings you want, click **OK** to make them take effect.

4 Personalize SoftWindows

Finally, this dialog box appears, allowing you to personalize your copy of SoftWindows:



➤ Type in your name and company.

➤ Enter the serial number from the front of the first installation disk, or the back of the installation CD-ROM jacket. Alternatively, click **Time Limited Demonstration** to evaluate SoftWindows for a limited period.

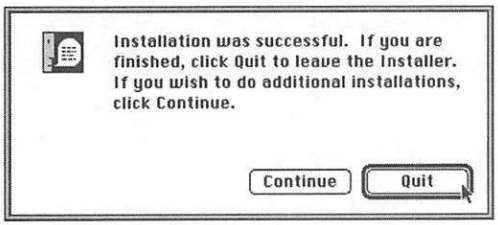
If you install a time limited demonstration copy of SoftWindows each session is limited to 20 minutes, and you risk losing work when the session ends.

➤ When you are sure that the information is correct click **OK** to save your details.

Alternatively, if you want to install SoftWindows without personalizing it click **Later**. You will then be asked to personalize SoftWindows when you first run it.

The installer then creates the new hard disk file, which may take a few minutes.

This dialog box then confirms that installation was successful:



➤ Click **Quit**.

SoftWindows is now set up and ready for use.

5 Run SoftWindows

➤ Double-click the **SoftWindows** icon.

SoftWindows™

If you are using a US system the Registration program will then run, to help you register your copy of SoftWindows. Refer to *Registering SoftWindows*, page 11, for information about how to proceed.

The SoftWindows MS-DOS window then appears with the standard MS-DOS startup information.

6 Run Windows

➤ Type the following command at the MS-DOS C:\> prompt:

```
WIN ↵
```

After the welcome screen Windows plays a chime to tell you that Windows is starting, and the Windows desktop will be displayed.

What next?

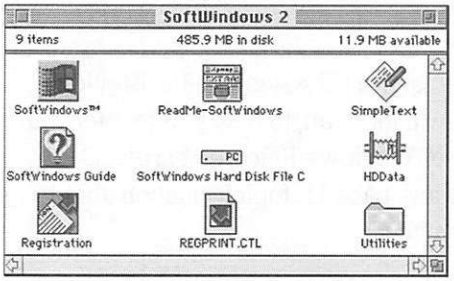
For more information about using SoftWindows refer to *Using SoftWindows*, page 31.

If you are not familiar with SoftWindows, or have not used a PC before, we recommend you try the *Tutorial*, page 25, which illustrates how to use SoftWindows to run a sample PC application.

For information about using MS-DOS refer to *Using MS-DOS*, page 115.

What SoftWindows installs

The **Easy Install** option creates a folder containing the following files:



- **SoftWindows** is the SoftWindows application.
- **ReadMe-SoftWindows** contains additional information about SoftWindows.
- **SimpleText** is the application you can use to read the ReadMe file.
- **SoftWindows Guide** is the Apple Guide help file. This will only be installed if you have System 7.5 or later.
- **SoftWindows Hard Disk File C** is the hard disk file used by SoftWindows, containing MS-DOS 6.22 and Windows 3.11.
- **HDData** is a data file used by SoftWindows if you want to create additional non-bootable (`D:` drive) hard disk files. For more information refer to *Creating new hard disk files*, page 63.
- **Registration** and **REGPRINT.CTL** are the registration utilities; refer to *Registering SoftWindows*, page 11.
- **Utilities** contains **HD Expander**, a utility to increase the size of an existing hard disk file; for more information refer to *To increase the size of a hard disk file*, page 62.

Registering SoftWindows

In the US or Canada you can use the SoftWindows Registration program, to make registering your copy of SoftWindows as straightforward as possible.

Registering your copy will entitle you to 30 days of free technical support and customer service, and it will also ensure that you are notified of future product upgrades.

Note that the registration program is only installed if you are running a US system. To register SoftWindows outside the US or Canada please complete and return the registration card included in the package.

If you have a modem, the SoftWindows registration program can save you effort by sending your registration information directly to Insignia, on a toll-free number.

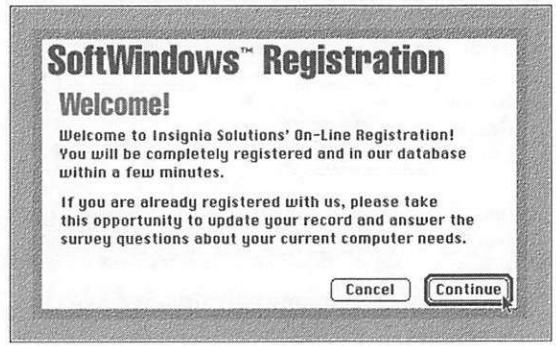
Alternatively, you can choose to print out your registration details to make a pre-addressed form, which you can then fax or mail to Insignia to complete the registration.

To register SoftWindows

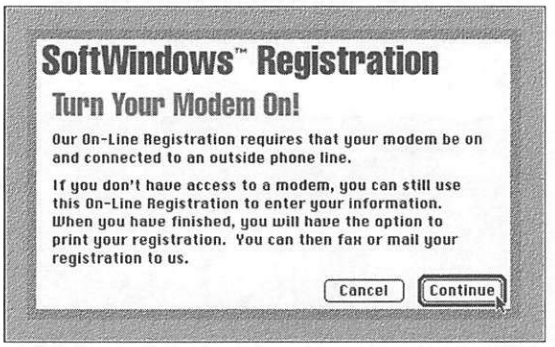
Until you register your copy of SoftWindows, the Registration program runs automatically when you run SoftWindows, and the following title screen appears:

➤ Click **Continue** to proceed with the registration.

The **Welcome** screen then appears:

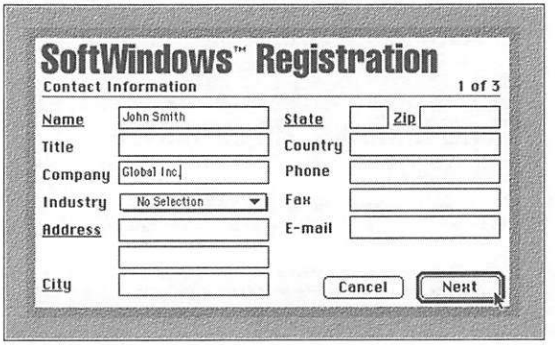


➤ Click **Continue** to display the following screen:



➤ If you are going to register by modem, turn on your modem now.

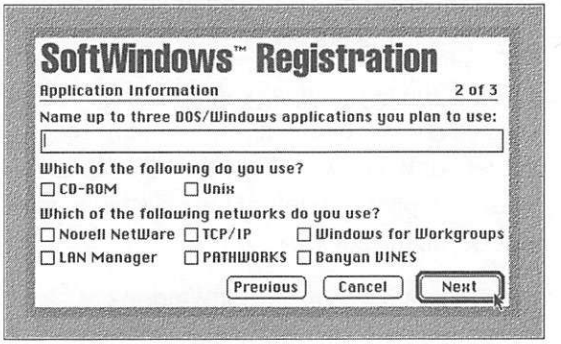
➤ Click **Continue** to display the **Contact Information** screen:



Your name and company will already have been filled in by the personalize dialog box, but you can change these if you wish.

➤ Complete the screen with your name and address, and your other contact information, so that we can keep you updated with information about SoftWindows.

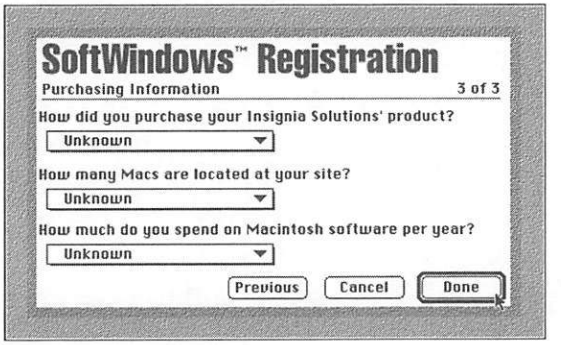
➤ Click **Next** to display the **Application Information** screen:



➤ Complete the screen with the information about your use of computers.

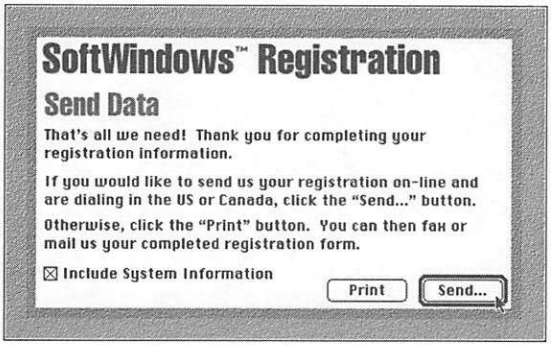
This will help us to improve our products based on your requirements.

➤ Click **Next** to display the **Purchasing Information** screen:



➤ Click **Previous** to review your other information, or **Done** when you have completed all three information screens.

This screen then lets you choose how to send the registration information to us:



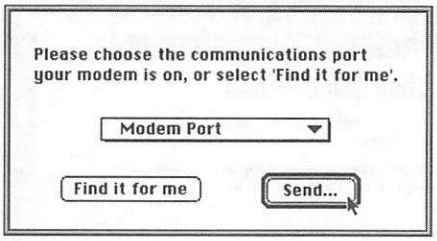
The registration program can read your computer model, system version, and RAM size. If you prefer not to send us this information, click **Include System Information**, so that the check box is not checked.

Then proceed as described in the following sections, depending on whether you want to send the registration by modem, or print it.

To send your registration information by modem

➤ Click **Send...** if you have a modem connected to a telephone line, and you would like to send your registration information electronically.

This dialog box then lets you specify which port your modem is connected to:



➤ Click **Find it for me** to set up the port automatically.

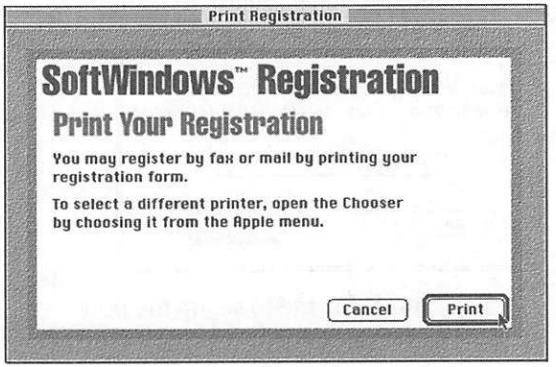
➤ Click **Send...** to send the registration information by modem.

If there is a problem using the modem you will be given the opportunity to print the information so that you can fax or mail it.

To print your registration information

➤ Choose **Print** in the **Send Data** screen if you want to print out a copy of your registration information, and fax or mail it to us.

This screen allows you to choose a printer before printing:



➤ When you have selected the printer click **Print** to proceed with printing the information as a single pre-addressed sheet of paper.

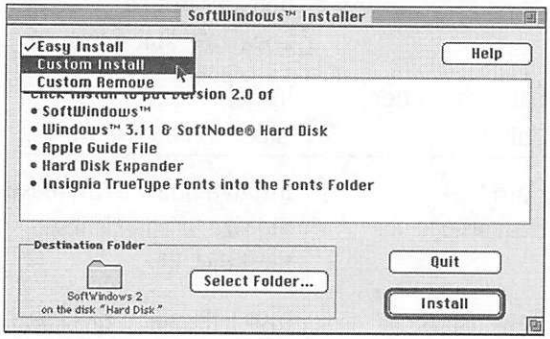
➤ Fax the information to the toll free number specified on the sheet, or fold it as directed and mail it to the pre-printed address to complete your registration.

Installing additional SoftWindows options

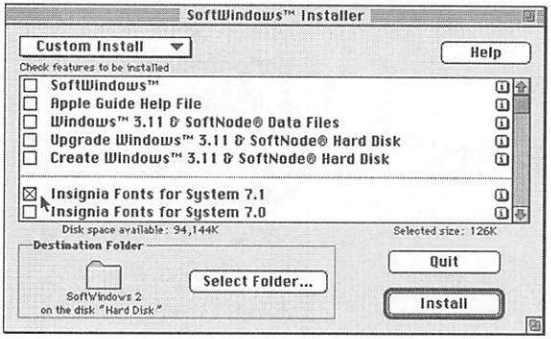
The **Custom Install** option provides additional installation options.

To install selected files

➤ Run the installer and choose **Custom Install** from the installer's pop-up menu.



➤ Click the checkbox for each item you want to install.



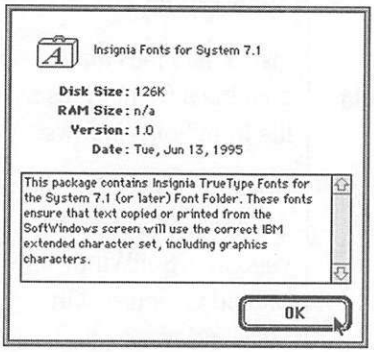
For more information about each item refer to the table on the next page.

➤ Click **Install** to install the selected items.

Note that the utilities will be installed into the Utilities folder.

To get information about an item

➤ Click the [i] information icon to the right of the item. Information about the item will be displayed; for example:



The table on the next page gives information about each of the installation options:

Select this option	*To do this*
SoftWindows™	Install the SoftWindows 2 application.
Apple Guide Help File	Install help for use with Apple Guide.
Windows™ 3.11 & SoftNode® Data Files	Install data files for creating a `C:` hard disk file from SoftWindows.
Upgrade Windows™ 3.11 & SoftNode® Hard Disk	Upgrade a hard disk file created by an earlier version of SoftWindows or SoftPC for use with SoftWindows 2.
Create Windows™ 3.11 & SoftNode® Hard Disk	Create a new hard disk file of specified size containing Windows.
Insignia Fonts for System 7.1/7.0	Install TrueType fonts to give the correct IBM extended character set when copying or printing text from SoftWindows.
Insignia Fonts for System 6	Install bitmap versions of the Insignia fonts.
MacIPX	Install the Macintosh IPX NetWare protocol stack.
DECnet Address Override Utility	Install a utility to enable the DECnet protocol to be used with your Macintosh Ethernet card.

Select this option	*To do this*
Ethernet Gateway/ Token Ring Gateway	Install a control panel to provide access to NetWare servers on an Ethernet or Token Ring network from a LocalTalk Macintosh.
Gateway Finder Utility	Install a utility to locate Gateways on a network.
Hard Disk Expander	Install a utility to increase the size of an existing hard disk file.
PowerBook Utilities	Install the ~don't rest and ~rest utilities to disable or restore the rest mode of PowerBooks, which can otherwise reduce the performance of SoftWindows.
SharePC	Install a utility to set up SoftWindows on a file server so that it can be run simultaneously by several users.

Upgrading an existing hard disk file

The installer will automatically upgrade the C: drive hard disk file you were using with an earlier version of SoftWindows when you install SoftWindows with the **Easy Install** option.

You can also use the installer's **Custom Install** option to upgrade any other hard disk file created by an earlier version of SoftWindows or SoftPC so that it can be used with SoftWindows 2.

In each case the installer creates a new, separate, hard disk file, and your original hard disk file is not altered in any way.

The upgraded hard disk file is created by first installing the following system files:

- Insignia drivers and utilities v4.0.
- MS-DOS 6.22.
- Insignia network utilities v4.0.
- Windows 3.11.

The applications and data files from your original hard disk file are then copied across to create a new, bootable (C: drive) hard disk file for SoftWindows 2.

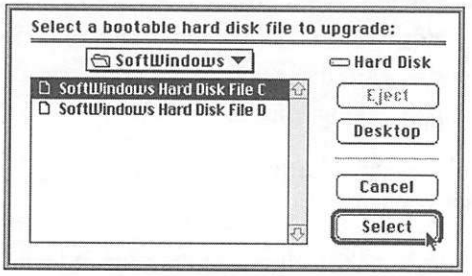
Note that some applications may not work correctly on an upgraded hard disk file, in which case you will need to re-install them from the original installation disks.

To select the hard disk file to upgrade

➤ Run the installer, and choose **Custom Install** from the pop-up menu.

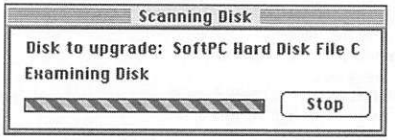
➤ Select **Upgrade Windows™ 3.11 & SoftNode® Hard Disk**, and choose **Install**.

This dialog box appears:



Select the hard disk file you want to upgrade and click **Select**.

The installer then scans the disk to upgrade:

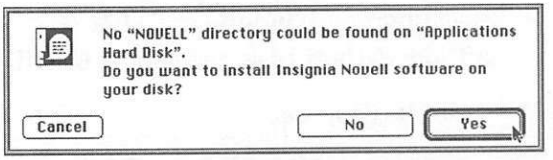


The installer will warn you if the disk is incompatible with SoftWindows 2, and should not be upgraded.

Now proceed as described below.

To upgrade a hard disk file

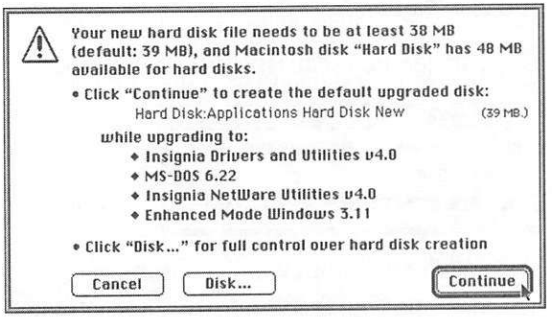
If the hard disk file you are upgrading does not contain any networking software, this dialog box appears:



➤ Click **Yes** to install networking software on the upgraded hard disk file, or **No** if you do not need networking software.

Alternatively, click **Cancel** to cancel the upgrading.

This dialog box then allows you to proceed with upgrading the disk.



By default, the new hard disk file is created 1 Mbyte larger than your original hard disk file, and with **New** added to the end of the name.

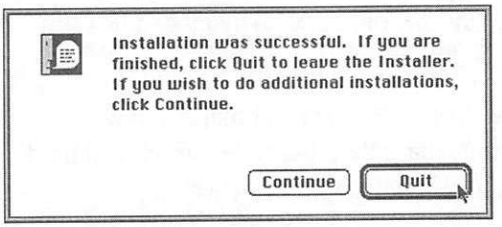
➤ Click **Disk...** if you want to specify a different name or size for the upgraded hard disk file.

➤ Click **Continue** to proceed.

The installer will then create the upgraded hard disk file, which may take a few minutes.

➤ Follow the instructions displayed on the screen, changing disks when necessary.

This dialog box informs you when the upgrade is complete:



Once you have upgraded a hard disk drive for use with SoftWindows version 2 you will only be able to use it as a `D:` drive with SoftWindows version 1.

You cannot upgrade a hard disk file containing Windows for Workgroups.

Setting up SoftWindows for multiple users

To install a multi-user pack

The following procedure describes how a system administrator should set up a multi-user pack.

- Install and personalize SoftWindows for your company.
- Duplicate and distribute the installed SoftWindows and hard disk file to users. If installation is to be server-based, only distribute the hard disk file.

If SoftWindows is going to be run from a server:

- Install SharePC using the **Custom Install** installation option; refer to *Installing additional SoftWindows options*, page 15.
- Run SharePC from the **Utilities** folder within the **SoftWindows** folder, and when prompted for an application select SoftWindows.

Now the specified number of users will be able to run SoftWindows from the server.

To share data files for creating SoftWindows hard disk files

To create a new hard disk file SoftWindows needs the data files HDData, HDData2, and so on.

You can provide a single set of SoftWindows data files on a server to allow any SoftWindows user on the network to build their own hard disk files.

To allow users to build non-bootable (`D:` drive) hard disks you need to provide the file HDData.

If you want users to be able to build bootable (`C:` drive) hard disks you also need to install the HDData files, using the installer's **Custom Install** option **Windows 3.11 & SoftNode Data Files**; refer to *Installing additional SoftWindows options*, page 15.

Each user will then be able to build their own hard disk file from within SoftWindows using the following procedure.

- Choose **PC Hard Disks...** from the **Setup** menu and proceed with creating a new hard disk file.
- When prompted to locate the HDData files, select the specified file on the file server.

Setting up Windows for Workgroups

Microsoft Windows is included as standard with SoftWindows 2. However, if you want to use Windows for Workgroups 3.11 you will need to purchase your own copy from your supplier.

To install Windows for Workgroups

➤ Start SoftWindows.

➤ Insert the first installation disk and start the Windows for Workgroups installation by typing:

A:\SETUP ↵

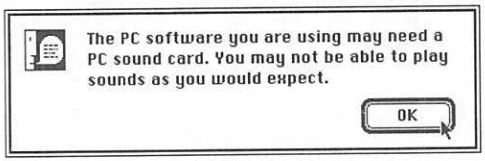
➤ Choose **Express Setup**.

Note that this requires approximately 10 Mbytes of free disk space. If you wish to reduce this you should choose **Custom**.

➤ Select the default installation directory, C:\WINDOWS.

➤ Verify that you wish to upgrade your current Windows version to Windows for Workgroups 3.11, and then follow the prompts given by the Setup application.

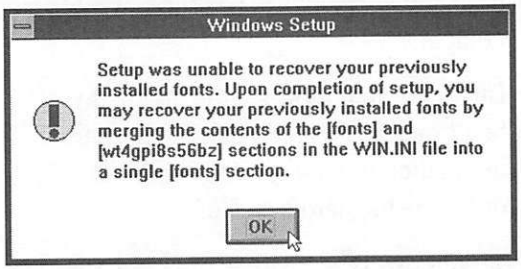
➤ Click **OK** when the following dialog box appears:



The registration screen will then be displayed.

➤ Enter your full name, company name, and product number and click **Continue**.

➤ Click **OK** when the following dialog box appears:



➤ If prompted to choose the type of Novell NetWare drivers to use, select **IPXODI.COM and LSL.COM (recommended)**.

The **Network Setup** dialog box will then be displayed.

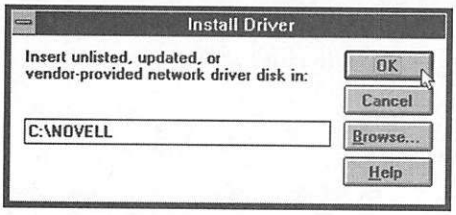
➤ Click **Advanced** and then click **Drivers**.

The **Network Drivers** dialog box will be displayed.

➤ Click **Add Adapter**.

➤ Select **Unlisted or Updated Network Adapter** and click **OK**.

The **Install Driver** dialog box is then displayed:



➤ Type the path `C:\NOVELL` and click **OK**.

➤ Select Insignia's Ethernet ODI and click **OK**.

The **Network Drivers** dialog box will be displayed.

➤ Verify that Insignia's Ethernet ODI driver is loaded, and the Microsoft NetBEUI and IPX/SPX Compatible Transport with NetBIOS protocols are listed, and click **Close**.

➤ When the **Network Setup** dialog is displayed, click **Continue**.

The Microsoft Windows **Network Names** dialog box will be displayed.

➤ Enter your user name, domain (or workgroup), and machine name.

➤ When prompted to replace the Novell NetWare files with the version being installed, click **NO**.

➤ When prompted for the path of `NET.CFG` to modify, select `C:\NOVELL`.

Windows for Workgroups Setup will verify that certain files need to be modified. Allow the Setup application to make those changes.

Once Windows for Workgroups Setup is complete, you will be asked to restart or return to MS-DOS.

➤ Select **Return to MS-DOS**.

To configure SoftWindows automatically

➤ At the `C:\WINDOWS>` prompt, type `CD\`.

➤ Run the batch file `WFW311.BAT`.

This automatically makes the required configuration changes.

Alternatively, you can make the configuration changes manually if you prefer, as described in the following section.

To configure SoftWindows manually

➤ Edit your NET.CFG file by typing:

```
EDIT C:\NOVELL\NET.CFG ↵
```

➤ Modify the file so that it matches the following example:

```
Link Support
    MemPool 4096
Link Driver ETHERSPC
    Frame ETHERNET_802.3
    Frame ETHERNET_II
    Frame ETHERNET_802.2
    Frame ETHERNET_SNAP
    Protocol SMB F0 ETHERNET_802.2
    Protocol IPX 0 ETHERNET_802.3
```

➤ Save the changes made to NET.CFG and exit from the MS-DOS editor.

➤ Edit your AUTOEXEC.BAT file by typing:

```
EDIT AUTOEXEC.BAT ↵
```

➤ Add the following lines before the line C:\WINDOWS\NET START:

```
CD NOVELL
LSL
ETHERSPC
IPXODI
NETX
CD\
```

A working example of an AUTOEXEC.BAT file is shown below:

```
C:\WINDOWS\SMARTDRV.EXE
CD NOVELL
LSL
ETHERSPC
IPXODI
NETX
CD\
C:\WINDOWS\NET START
C:\WINDOWS\ODIHLP.EXE
@ECHO OFF
PATH C:\WINDOWS;C:\INSIGNIA;
C:\DOS;C:\INSIGNIA\SOFTNODE\
NETBATCH;C:\NOVELL;C:\
SET TEMP=C:\DOS
C:\INSIGNIA\CKCONFIG
C:\INSIGNIA\FSADRIVE E:
C:\INSIGNIA\MOUSE.COM
MODE COM1:9600,N,8,1
PROMPT $P$G
VER
ECHO Type WIN and press RETURN to
  start Windows.
```

➤ Save the changes and exit from the MS-DOS editor.

➤ Select **Reset SoftWindows** from the **Setup** menu to restart SoftWindows.

SoftWindows should now be configured correctly to work with Microsoft Windows for Workgroups 3.11.

To disable Novell NetWare connectivity

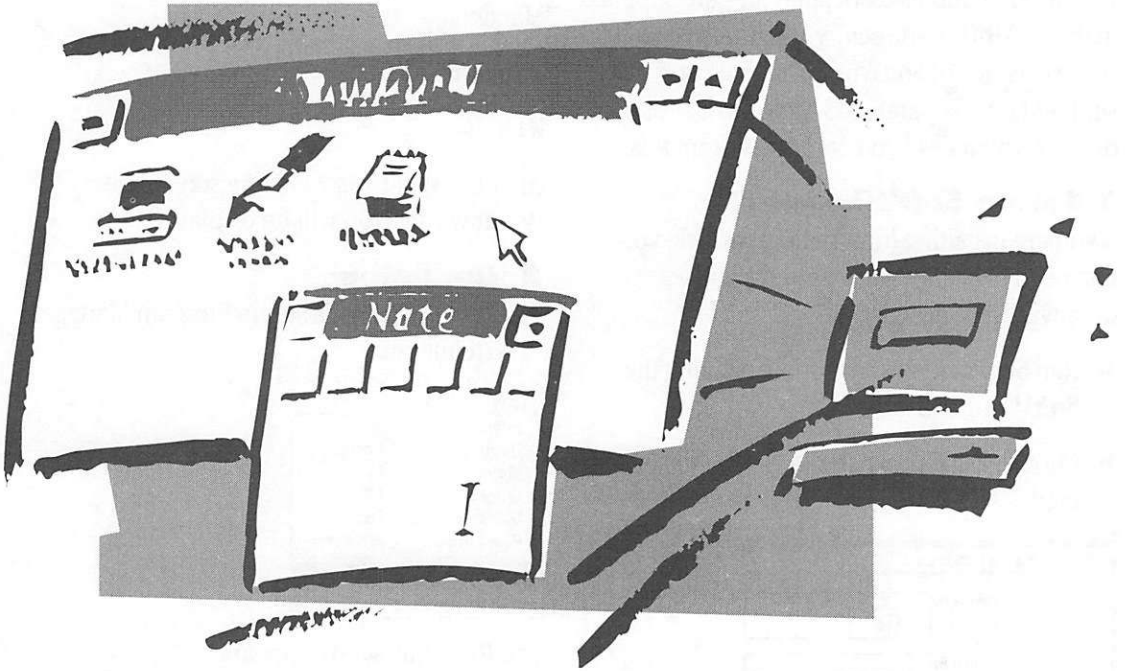
If you do not want to link to a Novell network, you should edit your `AUTOEXEC.BAT` file and remove the following lines:

```
IPXODI
NETX
```

These files are only needed to connect to a Novell network. If you are not on a Novell network, the following message will be displayed when you boot up:

```
file server not found
```

Tutorial



This chapter is designed to help you become familiar with using SoftWindows by installing and running a typical Windows application, and printing from Windows.

The tutorial is based on the award-winning Windows program WinPost, which is supplied with your SoftWindows package. WinPost lets you create simple reminders which you can leave on your Windows desktop. It is a PC shareware application, so if you like it and decide to continue using it please send the author the registration fee, as described in its online manual.

Installing the Windows application WinPost

As with most applications, WinPost is installed using a standard Windows setup procedure.

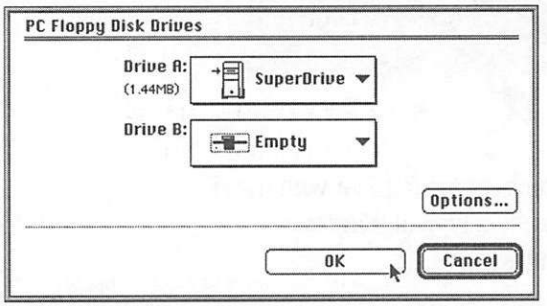
The installer and its associated files are supplied in the C:\WNPST directory. Alternatively, with some versions of SoftWindows WinPost is also supplied on a separate MS-DOS format floppy disk, in which case you can install from this.

1 Set up SoftWindows

If you are installing from the floppy disk, you first need to set up the floppy disk drive; otherwise skip this section.

➤ Run SoftWindows by double-clicking the **SoftWindows** icon.

➤ Choose **PC Floppy Disks...** from the **Setup** menu. This dialog box appears:



➤ Check that **Drive A:** is set to **SuperDrive**, to use the Macintosh internal floppy disk drive for the PC drive A:.

➤ Click **OK** to close the dialog box.

➤ Insert the WinPost installation floppy disk into the Macintosh floppy disk drive.

2 Run Windows

The most convenient way of installing Windows applications is from the Windows Program Manager.

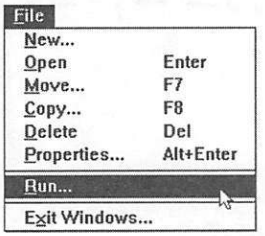
➤ At the MS-DOS C:\> prompt type:

WIN ↵

After the Windows welcome screen the Windows desktop will be displayed.

3 Run Setup

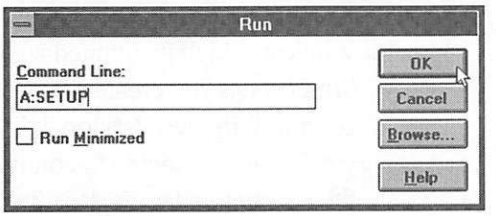
➤ Choose **Run...** from the Program Manager **File** menu:



The **Run** dialog box appears.

➤ If you are installing from floppy disk type A:SETUP. Otherwise, type:

C:\WNPST\SETUP



➤ Click **OK** to run the Setup program.

4 Specify where to install WinPost

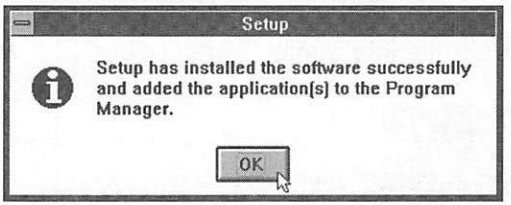
This dialog box allows you to specify the directory into which WinPost should be installed:

➤ Click **OK** to install in the `WINPOST` directory on your SoftWindows hard disk file.

The files are then copied to the directory you specified.

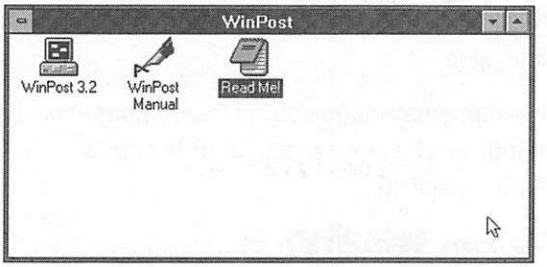
5 Finish the installation

Finally, this dialog box informs you when the installation is complete:



➤ Click **OK** to return to the Program Manager.

The installation creates a new WinPost group in the Program Manager, containing three icons:



- **WinPost 3.2** is the WinPost application.
- **WinPost Manual** provides documentation for WinPost. Double-click the icon to display the document so that you can read it or print it out.
- **Read Me!** is a document which gives additional information about WinPost.

6 Eject the installation disk

➤ If you installed from floppy disk choose **A: SuperDrive** from the **Eject** menu to eject the installation disk.

If the menu bar is hidden, hold down the ⌘ key so that you can select menu commands.

Running a Windows application

When you install a Windows application the installer usually creates icons for the application, and for any other programs or documents you might need to use with it. Often these are put in a separate group in the Program Manager.

For more information about the components of Windows you may want to read *Windows basics*, page 46.

To run WinPost

➤ Double-click the **WinPost 3.2** icon.

WinPost 3.2

The first time you run WinPost, a shareware registration notice is displayed informing you that you can evaluate WinPost for 21 days.

➤ Click **OK** to dismiss the notice.

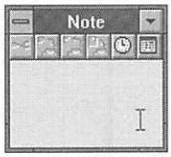
The WinPost program is now running and its icon is displayed at the bottom of the SoftWindows desktop.

WinPost

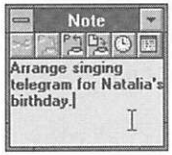
To create a new note

➤ Double-click the **WinPost** icon on the Windows desktop.

An empty **Note** window appears.



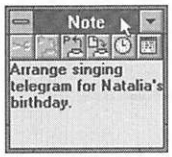
➤ Type in the information you want to remember.



The buttons along the top of the note provide useful functions. For example, the first three are cut, copy, and paste just like the equivalent commands in Macintosh programs.

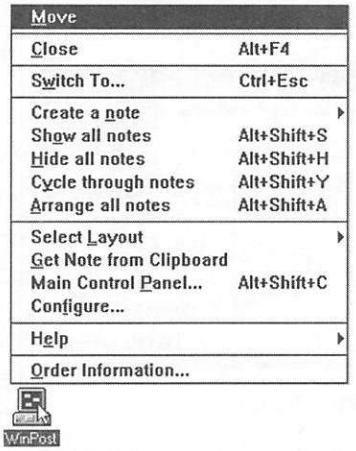
To move the note Window

➤ Drag the **Note** window by its title bar.



To display the WinPost menu

➤ Click the **WinPost** icon on the Windows desktop.



Some of the commands on the WinPost menu are described below.

For more information about all the commands refer to the **WinPost Manual** file.

To hide all the notes

➤ Choose **Hide all notes** from the WinPost menu.

The notes will be minimized to a single **Notes - All** icon on the Windows desktop:

Notes - All

To show all the notes

➤ Choose **Show all notes** from the WinPost menu or double-click the **Notes - All** icon on the Windows desktop.

To arrange the notes tidily

➤ Choose **Arrange all notes** from the WinPost menu.

The notes will be arranged in a cascade from the top left of the Windows desktop.

To hide the WinPost menu

➤ Click the Windows desktop.

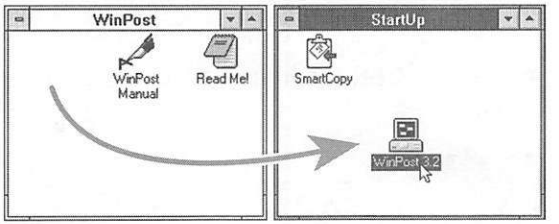
To exit from WinPost

➤ Choose **Close** from the WinPost menu.

To start WinPost automatically

➤ Double-click the **StartUp** program group icon to open its window.

➤ Drag the **WinPost 3.2** icon into the **StartUp** program group window:



Applications in the **StartUp** group are run automatically when Windows starts, so WinPost will always be available for your memos.

Printing from a Windows application

You can print from Windows applications to the printer available to your Macintosh, as set in your Macintosh Chooser.

To illustrate printing from Windows try printing the note you have created.

To set up SoftWindows

Before printing you need to ensure that SoftWindows is set up for the Macintosh printer you want to use.

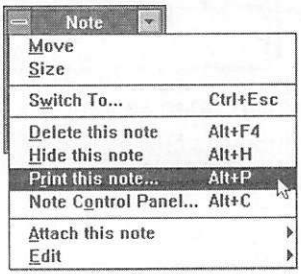
By default, SoftWindows and Windows are set up for a PostScript printer.

> If your Macintosh printer does not support Postscript you need to reconfigure SoftWindows before you can print. Refer to *To print from Windows to a non-PostScript printer*, page 54, for details on how to do this.

To print a note

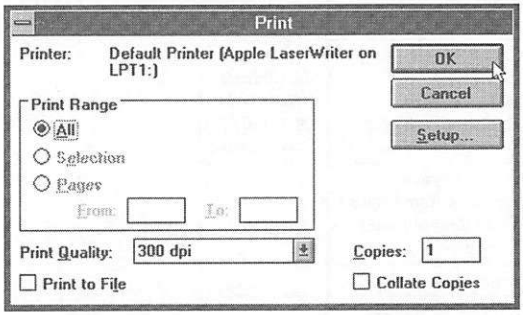
➤ Click the control menu button, in the top left corner of the **Note** window, to display the control menu.

➤ Choose **Print this note...** from the control menu.



Alternatively, you can use the key shortcut Alt P. Note that you should use the Macintosh option key as Alt.

The **Print** dialog box appears:



➤ Click **OK** to print the note.

While applications are printing from Windows the **Print Manager** icon appears at the bottom of the Windows desktop.

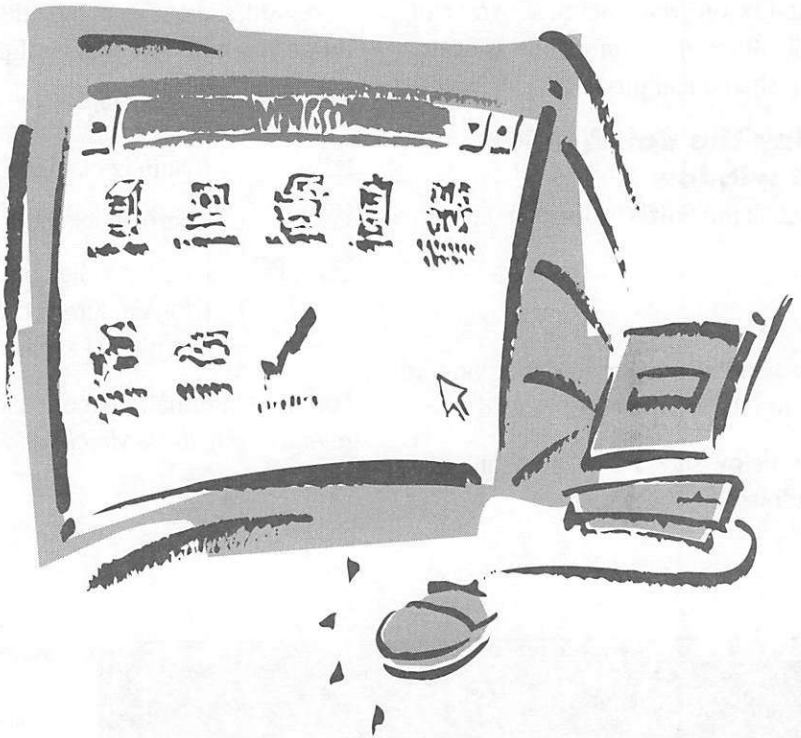
Print Manager

You can double-click this icon to see a list of the jobs waiting to be printed by Windows.

About 12 seconds after Windows has finished printing, the printouts will automatically be sent to your Macintosh printer.

If you prefer, you can choose when printouts are sent to the printer; refer to *To print manually*, page 52.

Using SoftWindows



This chapter describes how to start SoftWindows, and use it to run Windows and MS-DOS applications on your Macintosh.

Running SoftWindows

SoftWindows runs your PC applications in a separate window on your Macintosh. You can run PC applications at the same time as using your Macintosh applications.

To display the SoftWindows MS-DOS window

➤ Double-click the **SoftWindows** icon.

SoftWindows™

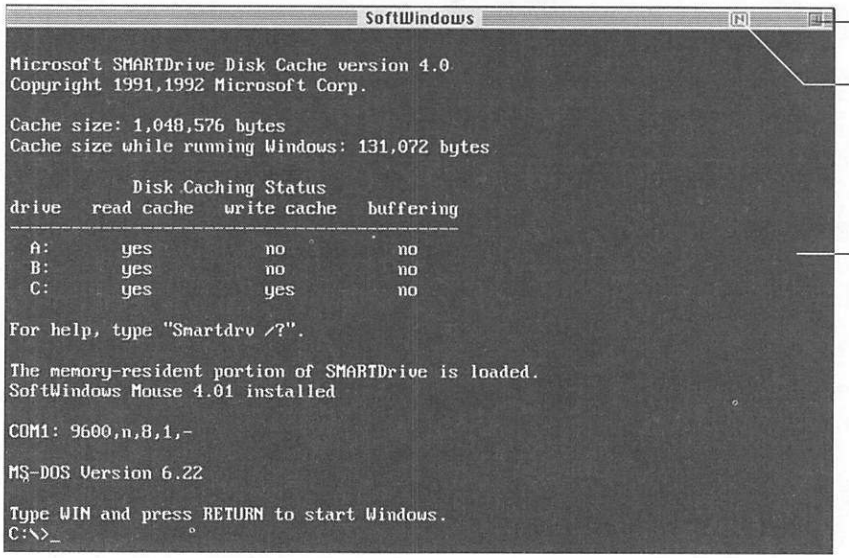
The MS-DOS window appears and the standard MS-DOS startup information is displayed.

The diagram below shows the main features of the SoftWindows MS-DOS window.

Unless your Macintosh has an extended keyboard, indicators in the title bar show what mode you have selected for the keyboard:

Indicator	*What it means*
N	Num Lock mode.
S	Scroll Lock mode.
F or K	Function key or keypad modes for Macintosh computers with no numeric keypad.

For more information about using the keyboard refer to *Using the keyboard and mouse*, page 39.



Zoom box

Indicators

SoftWindows MS-DOS window

Running Windows

SoftWindows is supplied with Microsoft Windows 3.11 pre-installed so that you can run Windows immediately.

To start Windows

➤ Type the following command at the `C:\>` prompt:

`WIN` ↵

After the Windows welcome screen the Windows desktop will be displayed, as shown below.

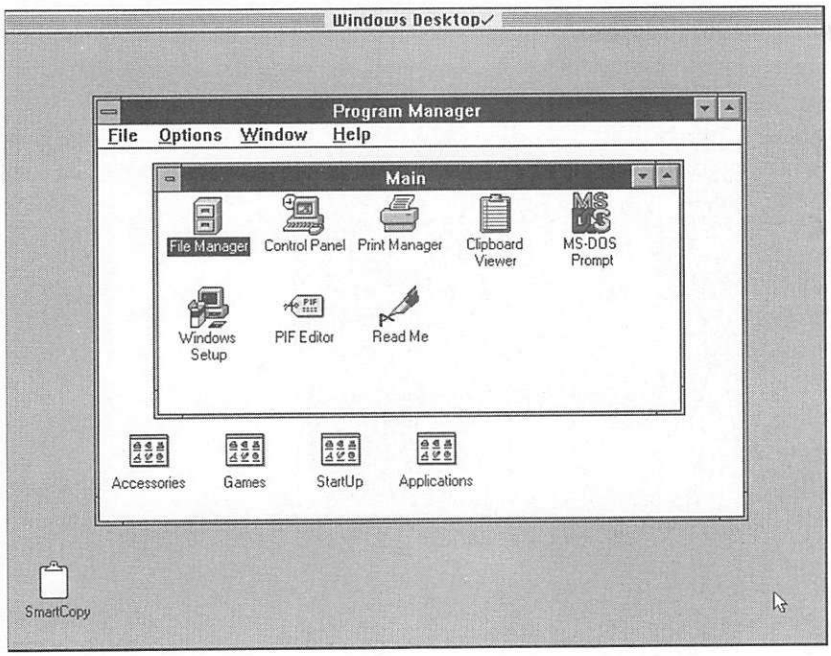
A ✓ appears in the title bar when the Windows desktop is running at optimum performance; for more information refer to *Improving the performance of SoftWindows*, page 78.

To use the mouse

As you move the Macintosh mouse pointer onto the SoftWindows window it automatically changes to the Windows mouse pointer, so that you can switch freely between Windows and Macintosh applications.

To improve performance the Windows mouse pointer is slightly reduced in size.

➤ Choose **Emulate PC Mouse** from the **Setup** menu if you prefer to work with the full size mouse pointer.



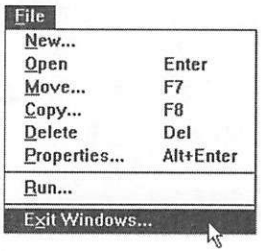
To display the SoftWindows MS-DOS window from Windows

➤ Double-click the **MS-DOS Prompt** icon in the **Main** program group:

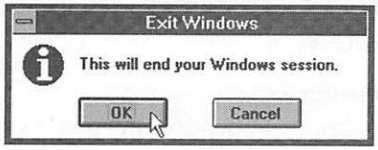
To exit from Windows

➤ If necessary, double-click the **Program Manager** icon to display the **Program Manager** window.

➤ Choose **Exit Windows...** from the **Program Manager File** menu.



The following dialog box appears:



➤ Choose **OK** to exit from Windows to the SoftWindows MS-DOS window.

For more information about the MS-DOS window refer to *Using MS-DOS*, page 115.

To change the size of the SoftWindows MS-DOS window

You can set your MS-DOS window to two sizes.

➤ Select the one you like by clicking the zoom box, in the top right corner of the window.

To use the full screen

➤ Choose **Best Window Position** from the **PC Video** submenu on the **Setup** menu.

This will make the whole of the SoftWindows window visible. If necessary, the menu bar will be hidden to make more screen space available.

➤ To use the menus while the menu bar is hidden hold down the ⌘ key.

➤ To restore the normal Macintosh menu bar type ⌘B.

To move the SoftWindows window

➤ Hold down the ⌘ and option keys together.

The mouse pointer changes to a hand.

➤ Drag on any part of the SoftWindows window.

This is useful if you are using the full screen and you cannot see the title bar of the SoftWindows window.

Getting help with using SoftWindows

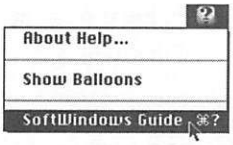
SoftWindows includes Apple Guide help, to give you step-by-step instructions on the most important features of SoftWindows as you work.

SoftWindows also includes Balloon Help, which gives a brief explanation of each of the SoftWindows menu commands and dialog boxes.

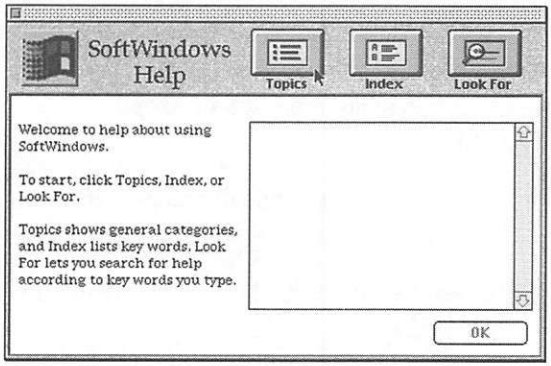
Note that Apple Guide requires System 7.5 or later. The **SoftWindows Guide** file is installed automatically if you install SoftWindows using System 7.5. If you want to add the **SoftWindows Guide** file at a later date use the **Apple Guide Help File** option in the installer's **Custom Install** dialog box; refer to *Installing additional SoftWindows options*, page 15.

To use Apple Guide

➤ Choose **SoftWindows Guide** from the help menu:



The **SoftWindows Help** window appears:



➤ Click one of the following buttons to choose what you want to do:

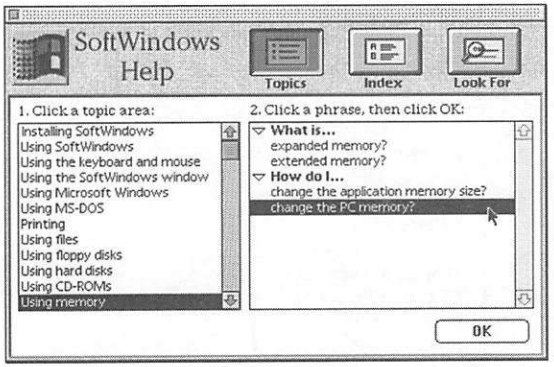
Click this	*To do this*
	Choose from a list of topics, organized by subject.
	Look up a topic in an alphabetical list.
	Type in the topic you need help with.

To choose from a list of topics

➤ Click **Topics** in the **SoftWindows Help** window.

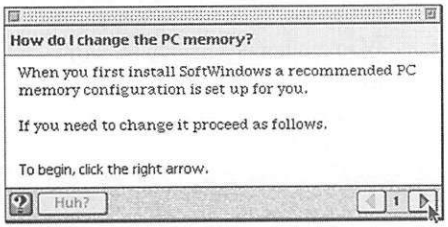
A list of topic areas is displayed.

➤ Select a topic area to display a list of topics, and then select the phrase you want to know about:



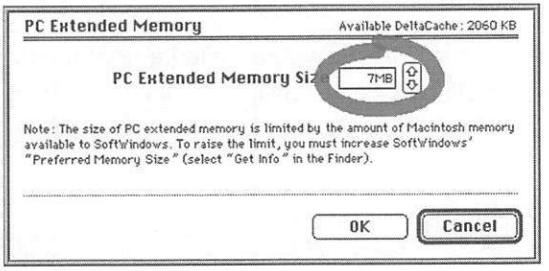
➤ Choose **OK** to see help.

The help consists of a series of panels, which tell you what to do:



➤ Follow the instructions on each panel.

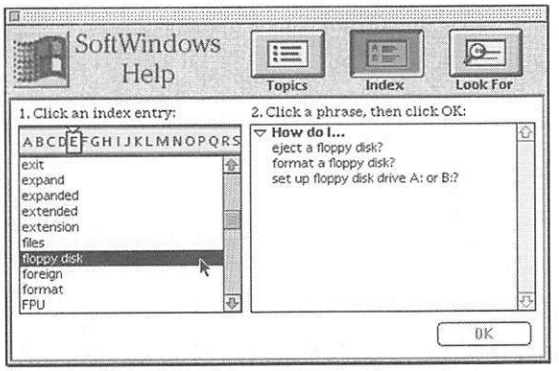
Where appropriate, areas of the screen will be highlighted to help you:



➤ When you have finished click the close box to exit from Apple Guide.

To choose a topic from the index

➤ Click **Index** in the **SoftWindows Help** window to display the help index.



➤ Move the marker to the initial letter you are interested in.

➤ Select an index entry to display a list of topics, and then select the phrase you want to know about.

To look for a topic

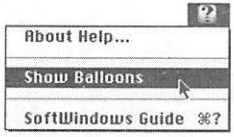
➤ Click **Look For** in the **SoftWindows Help** window.

➤ Type in the topic you want to know about to display a list of the available topics, and then select the phrase you want to know about.

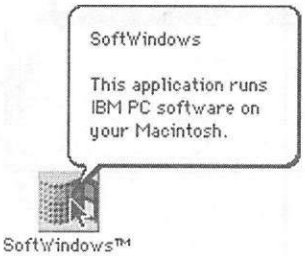
To get balloon help

You can also use Balloon Help to give you information about the SoftWindows menus, menu commands, and dialog boxes.

➤ Choose **Show Balloons** from the Balloon Help menu.



To get help about an item move the mouse pointer over it.



Using the keyboard and mouse

SoftWindows can use the alternative Macintosh keyboards to produce all the keys and key combinations you need to run PC applications.

The PC/AT 101-key keyboard

The illustration below shows the layout and keycap engravings of the 101-key US PC/AT keyboard emulated by SoftWindows.

The table on the next page lists the Macintosh keyboard keys, or key combinations, needed to produce all the keys on this keyboard that do not correspond directly to Macintosh keys.

In the table the PC/AT keys are given the names shown in the diagram below, except where the keycap engraving is a symbol. In this case they are given descriptions (such as backspace).

On all the Macintosh keyboards all the alphanumeric and punctuation keys produce the same PC/AT characters when used with SoftWindows, so they are not included in the table. Any PC/AT key not included in the table will be produced by the Macintosh keyboard key with the same keycap engraving.

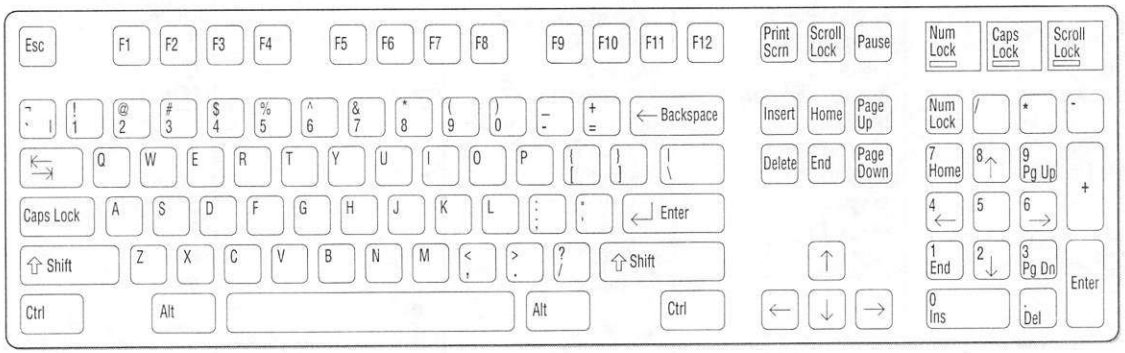
To use a PowerBook keyboard

Some PowerBook keyboards do not have function keys or a numeric keypad. SoftWindows therefore provides two special modes to enable these keys to be entered.

- ➤ Press ⌘F to select Function mode, which lets you type function keys.
- ➤ Press ⌘K to select Keypad mode, to let you use the PC keypad.
- ➤ Press the same keys again to cancel the mode.

The PC mouse

The PC mouse usually has two buttons. SoftWindows uses the Macintosh mouse button as the left PC mouse button. The right mouse button is obtained by using keypad =, or enter on PowerBooks.



PC/AT 101-key keyboard

PC key	*Extended keyboard*	*Standard keyboard*	*PowerBook keyboard*	
			Normal mode	*Function mode* (⌘F)
Alt	option	option	option	
Right Alt (Alt Gr)	right option	⌘←	⌘←	
Backspace	delete	delete	delete	
Break	control pause (F15)	control ⌘ keypad /	control ⌘\	
Ctrl	control	control	control	
Ctrl right	right control	⌘↓	⌘↓	
Delete	del	⌘D	⌘D	
End	end	⌘L	⌘L	
Escape	escape	escape or ⌘E	escape or ⌘E	
F1 to F9	F1 to F9	⌘ keypad 1 to 9	⌘1 to 9	1 to 9
F10	F10	⌘ keypad 0	⌘0	0
F11	F11	⌘ keypad .	⌘-	
F12	F12	⌘ keypad enter	⌘=	
Home	home	⌘0	⌘0	
Insert	help/ins	⌘I	⌘I	
Page Up	page up	⌘U	⌘U	
Page Down	page down	⌘W	⌘W	
Pause	pause (F15)	⌘ keypad /	⌘\	
Print Scrn	print screen (F13)	⌘ keypad = or ⌘P	⌘[or ⌘P	
Scroll Lock	scroll lock (F14)	⌘ keypad clear	⌘]	
Shift right	right shift	⌘→	⌘→	
Right mouse button	keypad = or ⌘R	keypad = or ⌘R	enter or ⌘R	

PC keypad key	*NumLock off*	*NumLock off*	*Normal mode*	*Keypad mode* (⌘K)
Del	keypad .	keypad .		. (period)
End	keypad 1	keypad 1		1
Enter	keypad enter	keypad enter		enter
Home	keypad 7	keypad 7		7
Ins	keypad 0	keypad 0		0
Num Lock	keypad clear or numlock	keypad clear or numlock	⌘N	⌘N
Pg Up	keypad 9	keypad 9		9
Pg Dn	keypad 3	keypad 3		3
↑	keypad 8	keypad 8		8
↓	keypad 2	keypad 2		2
←	keypad 4	keypad 4		4
→	keypad 6	keypad 6		6
/	/	/	⌘/	
*	*	*	⌘'	
+				+
-				-

Copying and pasting text in MS-DOS

When SoftWindows is in text mode, text can be copied from and pasted into the SoftWindows MS-DOS window.

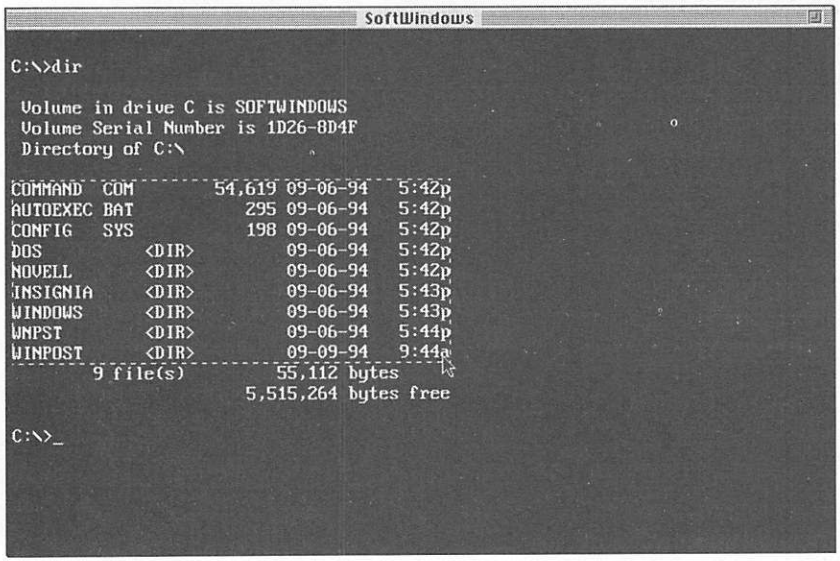
To paste text into the SoftWindows MS-DOS window

- Select the text you want to copy.
- Choose **Copy** from the application's **Edit** menu.
- Switch to SoftWindows.
- Choose **Paste** from the SoftWindows **Edit** menu.

The text will be typed into the SoftWindows window at the current cursor position.

To copy text from the SoftWindows MS-DOS window

- Select the text you want to copy, by holding down the mouse button and dragging over the text in the SoftWindows MS-DOS window, as shown below.
- Choose **Copy** from the SoftWindows **Edit** menu.
- Switch to the application you want to paste into.
- Choose **Paste** from the application's **Edit** menu.



Copying and pasting text and graphics in Windows

SoftWindows includes an Insignia utility called SmartCopy, which transfers text and graphics between the Macintosh and Windows clipboards, so that you can copy or cut and paste freely between Macintosh and Windows applications.

SmartCopy

When you move the mouse pointer out of the SoftWindows window the **SmartCopy** icon changes to show whether text or graphics is ready to paste into a Macintosh application:

SmartCopy

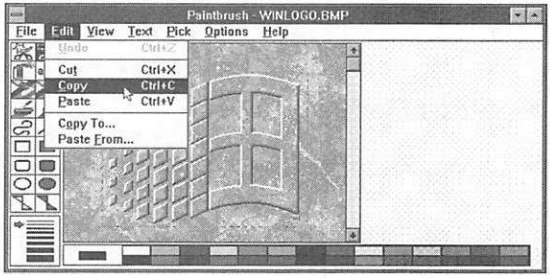
When you move the mouse pointer into the SoftWindows window the **SmartCopy** icon changes to show whether text or graphics is ready to paste from a Macintosh application:

SmartCopy

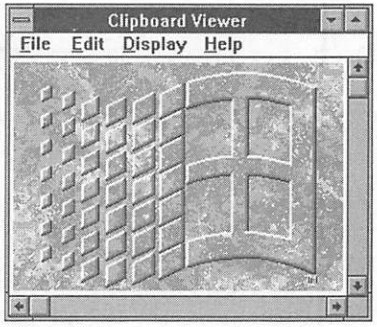
To copy text or graphics from Windows to the Macintosh

➤ Select the text or graphics you want to copy from the Windows application.

➤ Choose **Copy** from the Windows application's **Edit** menu:



The text or graphics is put onto the Windows clipboard, and you can use the Windows **Clipboard Viewer** to view it:



➤ Switch to the Macintosh application you want to use.

SmartCopy transfers the text or graphics to Macintosh format on the clipboard.

➤ Choose the appropriate command to paste in the text or graphics you copied.

To copy text or graphics from Macintosh to Windows

➤ Select the text or graphics you want to copy.

➤ Choose **Copy** from the Macintosh application's **Edit** menu.

➤ Switch to SoftWindows.

SmartCopy transfers the text or graphics to Windows format on the Windows clipboard, and you can use the **Clipboard Viewer** to view it.

➤ Choose **Paste** from the **Edit** menu of the Windows application you want to use, to paste the text or graphics in.

Playing sound from Windows

SoftWindows emulates the Windows sound facilities, allowing you to play Windows waveform files on your Macintosh. Waveform files are identified with a `.WAV` extension.

You can also choose an interesting sound for each of the events that can occur in Windows using the **Sound** control panel.

To use Windows sound you need to have **PC Sound Support** checked in the **SoftWindows Preferences** dialog box; see *Preferences... (File menu)*, page 102.

Note that SoftWindows does not support MIDI sounds.

To set sounds for Windows events

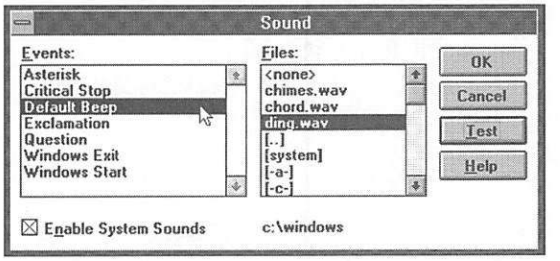
➤ Open the **Control Panels** window, by double-clicking the **Control Panels** icon in the Main program group.

➤ Open the **Sound** control panel by double-clicking the **Sound** icon:

The **Sound** control panel is displayed.

➤ Select the Windows event you want to identify with a sound.

The **Files** list shows the current waveform file assigned to that event, or **<none>** if no sound is played.



➤ Select the waveform file you want to use.

➤ Click **Test** to play the sound.

➤ When you have set up the sound you want to play for each event click **OK** to exit from the control panel.

To play a sound from Windows

➤ Open the **Accessories** program group window by double-clicking the **Accessories** icon in the Program Manager:

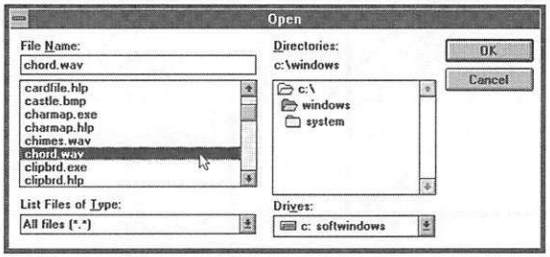
Accessories

➤ Run the Media Player, by double-clicking the **Media Player** icon in the **Accessories** window:

Media Player

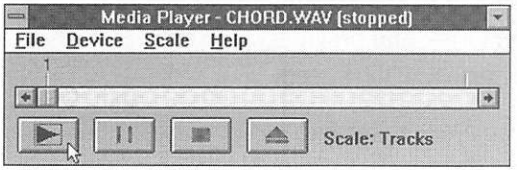
The **Media Player** window is displayed.

➤ Choose **Open...** from the Media Player **File** menu, and select a waveform file, such as `CHORD.WAV`:



➤ Click **OK** to load the waveform.

➤ Click the Media Player play button to play the waveform:



➤ Choose **Exit** from the **File** menu to exit from Media Player.

Windows basics

Windows 3.11 is a graphical user interface for PCs. It gives you an easier way of moving around the MS-DOS structure of files and directories, and provides some extra facilities for managing the system.

If you are familiar with running applications on your Macintosh you should not experience too much trouble using Windows. Many of the techniques of using the mouse and resizing and moving windows are almost identical in both systems.

Before using Windows you may find it helpful to read about MS-DOS; refer to *Using MS-DOS*, page 115.

The following diagram gives a brief description of the most important components of Windows.

Program Manager is always active when you are working with Windows. You can use **Program Manager** to start other applications and organize applications into logical groups.

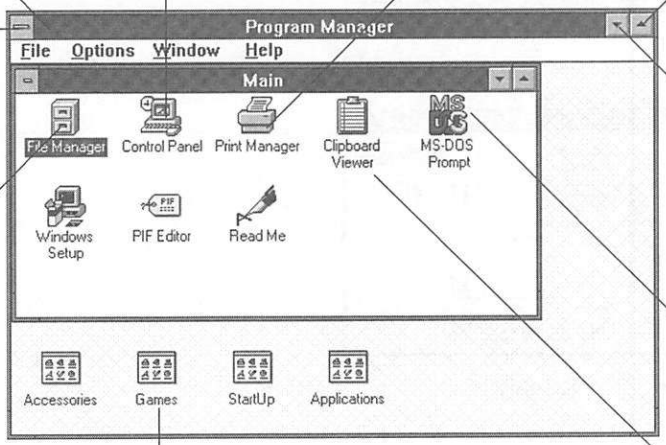
The applications in the **Control Panel** allow you to change the configuration of Windows. Any changes you make are stored in the Windows initialization file `WIN.INI`.

Print Manager allows you to define default printers, connect to printers on a network, change the configurations of printers, and manage the active printing of files.

Control menu box provides commands to manipulate or close the window.

Maximize button enlarges the window to fill the entire desktop.

Minimize button reduces the window to an icon on the desktop.



File Manager is a tool for managing files and directories in a graphical fashion. You can use **File Manager** to view all your files and directories, and copy, move, delete, and rename files.

MS-DOS Prompt lets you switch to MS-DOS, keeping your Windows session running.

A group icon is a minimized group window, comparable to a closed folder in the Macintosh Finder. Group icons are usually located along the lower edge of the **Program Manager** window.

Clipboard Viewer allows you to look at the contents of the Windows clipboard.

Installing and running Windows applications

Most Windows applications are installed using the standard Windows setup procedure. Provided you have standard 3.5-inch disks for your Windows application, the procedure is similar to installing software on your Macintosh.

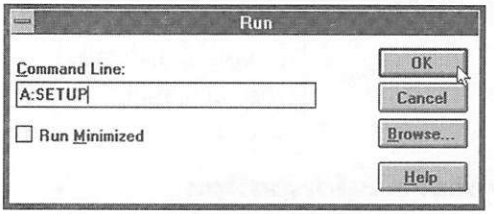
To install a Windows application

➤ Choose **PC Floppy Disks...** from the **Setup** menu and check that **Drive A:** is set to **SuperDrive** to use the Macintosh internal floppy disk drive for drive A:.

➤ Insert the application's installation floppy disk into the Macintosh floppy disk drive.

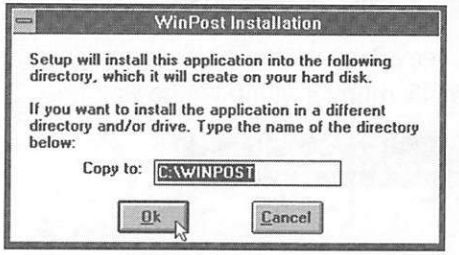
➤ Choose **Run...** from the Program Manager **File** menu.

➤ Follow the application's installation instructions. For example, you may be instructed to type A:SETUP.



➤ Click **OK** to start the installation.

As the installation proceeds, dialog boxes similar to the one shown below will prompt you for information needed for the installation.



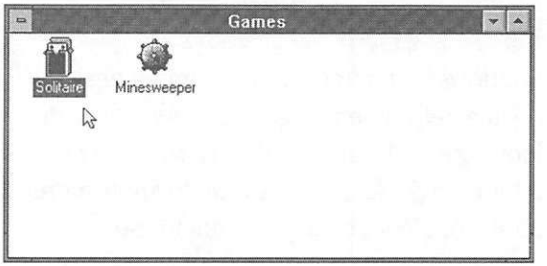
To run a Windows application

➤ Double-click the application icon in the appropriate program group.

For example, to run Solitaire, supplied with Windows, proceed as follows:

➤ Double-click the **Games** program group icon to open it.

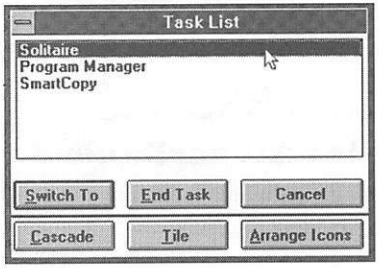
➤ Double-click the **Solitaire** icon to run Solitaire.



To switch between applications

➤ Choose **Switch To** from the control menu of the window you are working in or double-click the Windows desktop background.

You will see a **Task List** of applications that you are currently running within Windows.



➤ Double-click the name of the application you want to use.

To run the Windows Tutorial

➤ Choose **Windows Tutorial** from the Program Manager's **Help** menu.

To do the Windows tutorial you will need to have a desktop of 640 x 480, otherwise you will be informed that you need at least a VGA display.

To use Windows Help

Windows 3.11 comes with a comprehensive on-line help system. It is a convenient way of looking up information about a task you are performing, a feature you want to know more about, or a command you want to use.

Windows Help is available whenever you see a **Help** command button or a **Help** menu in the menu bar.

➤ Select the command you want from the **Help** menu.

The commands are explained in the following table:

Command	*What it displays*
Contents	An alphabetical list of all Help topics available for the active application.
Search For Help On	A dialog box for locating information about a specific topic.
How To Use Help	Information on using Windows Help.
About (application)	Information about the active application (registration details, version number, and so on).

For more information

For more information about using Windows refer to any good book on Windows, such as *Windows for Dummies* from IDG books or the *Microsoft Windows User's Guide and User's Reference*.

Connecting to a NetWare file server

SoftWindows includes Insignia's SoftNode networking software to enable you to access PC network file servers from SoftWindows running on a Macintosh.

Once you have set up the network access you have the same access to a PC file server as a PC user, including the ability to run multi-user PC applications.

The following instructions assume that you are using one of the following network configurations:

- An Ethernet network with frame type 802.3.
- A Token Ring network with frame type 802.2.

They also assume that `LASTDRIVE` is set to `H` in the `CONFIG.SYS` file.

If you have problems connecting to the network you may need to set a different frame type; refer to *Using Novell NetWare*, page 141.

To run SoftNode on an Ethernet network

➤ Type the following command at the `C:\>` prompt:

```
ETHER ↵
```

To run SoftNode on a Token Ring network

➤ Type the following command at the `C:\>` prompt:

```
TOKEN ↵
```

To run SoftNode on a LocalTalk network

If you are connected to a LocalTalk network you may first need to set up a gateway to the PC Ethernet network; refer to *Using a LocalTalk gateway*, page 144.

➤ Then type the following command at the `C:\>` prompt:

```
ATALK ↵
```

To log in to the NetWare file server

If you have carried out the setup successfully you should now see the NetWare file server login prompt, `I:\LOGIN>`.

➤ Type the following command at the `I:\LOGIN>` prompt:

`LOGIN` ↵

➤ Enter the user name and password given to you by your network administrator or log in as `guest` without a password if you do not yet have a user account.

You can now run PC software over the network just as you would on any PC connected to the NetWare file server.

To test SoftNode

You can run a NetWare utility to verify that your connection to the NetWare file server is working.

➤ Type the following command at the `I:\LOGIN>` prompt:

`SLIST` ↵

You will then see a list of servers, including the one you are logged in to.

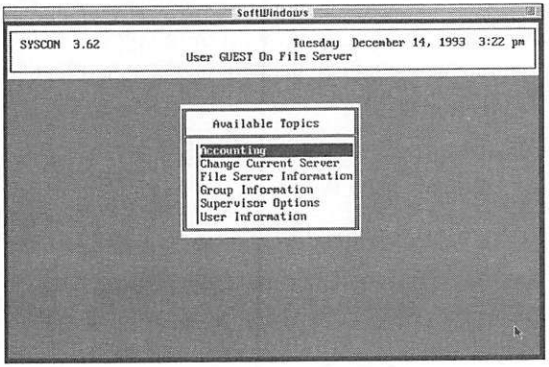
To run the system configuration program

You can run the system configuration program to verify that your connection to the NetWare file server is working.

➤ Type the following command at the `I:\LOGIN>` prompt:

`SYSCON` ↵

You will then see the standard **SYSCON** main menu:



➤ Press Esc to display the **Exit SYSCON** menu and press ↵ to exit.

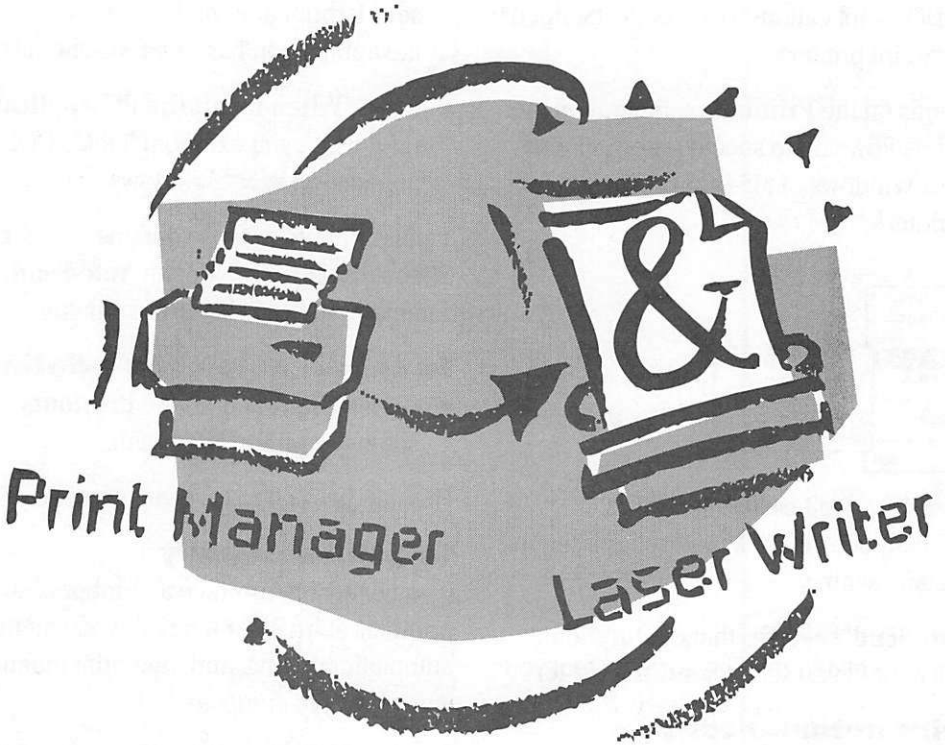
To log out from the NetWare file server

➤ When you have finished your session type:

`LOGOUT` ↵

This will log you out from the NetWare file server.

Printing from SoftWindows



This chapter describes how to print from Windows and MS-DOS applications to your Macintosh printer.

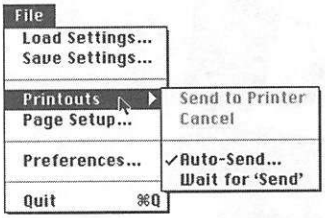
Choose the appropriate instructions from the following table:

To print from	*To this printer*	*See page*
Windows applications	PostScript	53
Windows applications	Non-PostScript	54
MS-DOS applications	Any	55
Windows or MS-DOS applications	Serial	56

Printing

SoftWindows allows you to print from Windows and MS-DOS applications to either PostScript or non-PostScript printers.

The options on the **Printouts** submenu on the **File** menu allow you to specify when printing from your Windows or MS-DOS program is sent to the printer.

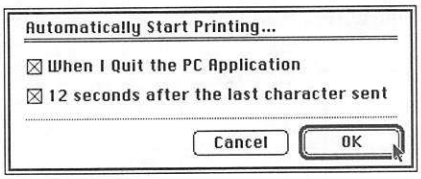


Auto-Send... specifies that printing is automatically sent to the Macintosh printer; this is the default setting.

Wait for 'Send' specifies that output should not be sent until you select **Send to Printer**.

To print automatically

➤ Choose **Auto-Send...** from the **Printouts** submenu on the **File** menu to select automatic printing. This dialog box appears:



➤ Check **12 seconds after the last character sent** to print automatically 12 seconds after the application has stopped sending output.

➤ Check **When I Quit the PC Application** to print when you exit from the MS-DOS application in SoftWindows.

If either or both of these options is checked a ✓ will be displayed beside the **Auto-Send...** command in the **Printouts** submenu.

To cancel automatic printing

➤ Choose **Cancel** from the **Printouts** submenu on the **File** menu.

This can be used to cancel automatic printing.

To print manually

If you expect to produce a number of small printouts at irregular intervals you can turn off automatic printing, and then print manually when they are completed.

➤ Choose **Wait for 'Send'** from the **Printouts** submenu on the **File** menu to turn off automatic printing.

➤ Choose **Send to Printer** to send any printing to the printer. If there is no printing waiting the command will not be available.

Printing from Windows applications

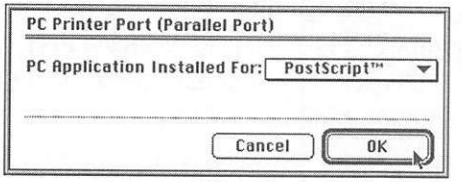
Windows applications give best results when set up for a PostScript printer; refer to *To print from Windows to a PostScript printer* in the next section.

If your Macintosh printer does not support PostScript you can set up SoftWindows to emulate an LQ-2500 printer on any Macintosh printer. You should then set up Windows to print to an LQ-2500.

To print from Windows to a PostScript printer

➤ Select the PostScript printer connected to your Macintosh or to your network in the Macintosh Chooser.

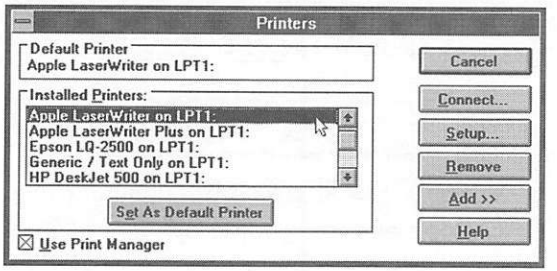
➤ Choose **PC Printer Port...** from the SoftWindows **Setup** menu to display the currently-selected printer support:



➤ If necessary, select **PostScript** from the pop-up menu and click **OK**.

➤ Double-click the **Control Panel** icon in the Windows **Main** program group.

➤ Double-click the **Printers** control panel icon to display the **Printers** dialog box:



The currently-selected printer is shown in the **Default Printer** box at the top of the dialog box.

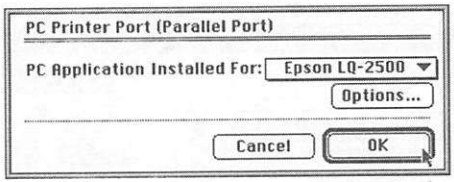
- Check that this is set to **Apple LaserWriter on LPT1**.
- Click **Cancel** to close the dialog box.
- Print from the Windows application; typically you do this by choosing **Print...** from the **File** menu.

The application will first print to the SoftWindows printing buffer. The PostScript information will then be sent to the Macintosh printer. At this point the Print dialog box for the Macintosh printer will be displayed.

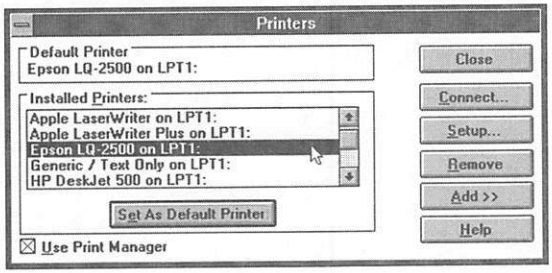
- Click **Print** to send the print job to the printer.

To print from Windows to a non-PostScript printer

- Choose **PC Printer Port...** from the SoftWindows **Setup** menu to display the currently-selected printer support:



- Select the **Epson LQ-2500** option from the pop-up menu, and choose **OK**.
- Double-click the **Control Panel** icon in the Windows **Main** program group.
- Double-click the **Printers** control panel icon to display the **Printers** dialog box.
- Select **Epson LQ-2500 on LPT1:** and click **Set As Default Printer**.



- Click **Close** to close the dialog box.
- Print from the Windows application; typically you do this by choosing **Print...** from the **File** menu.

The application will first print to the SoftWindows printing buffer. The printing information will then be sent to the Macintosh printer. At this point the Print dialog box for the Macintosh printer will be displayed.

- Click **Print** to send the print job to the printer.

Printing from MS-DOS applications

Most MS-DOS applications give best results when set up for a dot-matrix printer. SoftWindows emulates the widely-used Epson LQ-2500 printer on any Macintosh printer.

In addition, SoftWindows can drive a PC serial printer connected to a serial port on the Macintosh so that your application can print directly to it.

To print from an MS-DOS application to any Macintosh printer

➤ Choose **PC Printer Port...** from the **Setup** menu, select the **Epson LQ-2500** option, and choose **OK**.

➤ Follow the instructions supplied with your MS-DOS application to configure it to print to an Epson LQ-2500.

LQ-2500 printing is suitable for most MS-DOS software which typically produces an 80- or 132-character wide, plain text printout.

If your application presents you with a number of Epson options, choose the first of the following options that is available:

- LQ-2500
- LQ-1000
- LQ-1500, v2 ROM
- LQ-1500
- FX-105
- Epson printer

SoftWindows emulates the parallel printer port, called `LPT1:`, that IBM PC/AT computers use, so if you need to specify the port used select `LPT1:`. This port is also referred to as the parallel port.

The output goes to the Macintosh printer selected in the Chooser, just like printed output from any other Macintosh application.

The LQ-2500 can print up to 132 columns. Note that using the standard fonts this is too wide for a US letter size (or A4) sheet. In this case choose the **Condensed** option; refer to *Epson LQ-2500 emulation options*, page 97. Alternatively, use landscape mode, or set a percentage reduction with the **Page Setup...** command on the **File** menu.

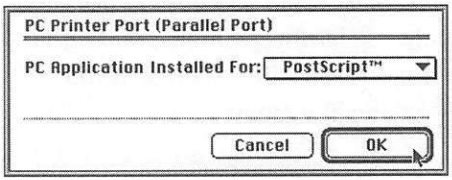
➤ Choose the appropriate command to print from your MS-DOS application.

To print from an MS-DOS application that supports PostScript to a PostScript printer

A small number of MS-DOS applications support printing to a PostScript printer.

➤ Select the PostScript printer connected to your Macintosh or to your network in the Macintosh Chooser.

➤ Choose **PC Printer Port...** from the SoftWindows **Setup** menu to display the currently-selected printer support:



➤ If necessary, select **PostScript** from the pop-up menu and choose **OK**.

➤ Follow the instructions supplied with the application to configure the software for printing to a generic PostScript printer.

➤ Choose the appropriate command to print from your MS-DOS application.

The application will first print to the SoftWindows printing buffer. The PostScript information will then be sent to the Macintosh printer. At this point the Print dialog box for the Macintosh printer will be displayed.

➤ Click **Print** to send the print job to the printer.

To print to a serial printer

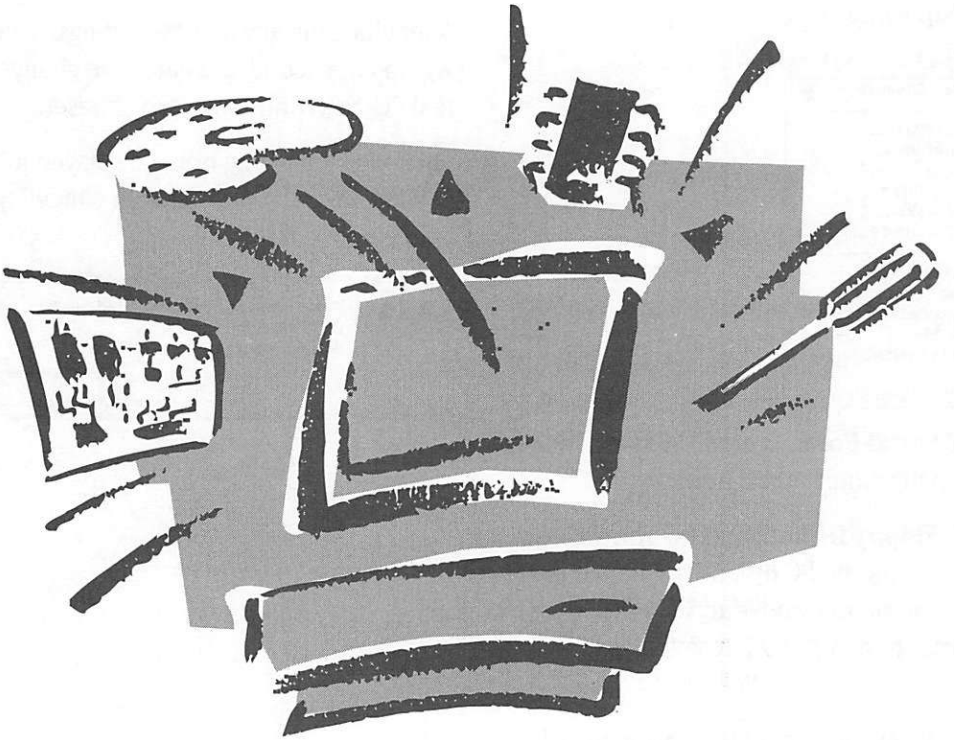
You can also print from a PC application to a serial printer with a D3-25 connector by connecting it to the Macintosh modem or printer port. You then use the **PC Serial Ports...** command to assign `COM1:` to the Macintosh port connected to the printer; refer to *PC Serial Ports... (Setup menu)*, page 99.

If your MS-DOS program does not let you print to the serial port you can achieve this by typing this command at the MS-DOS `C:\>` prompt before running the program:

```
MODE LPT1:=COM1: ↵
```

This redirects data sent to the `LPT1:` port so that it goes to the `COM1:` port instead.

Setting up SoftWindows



This chapter describes how to build a PC to the specification you want, using SoftWindows to emulate the PC's ports, disks, memory, and display.

Using the Setup menu

You set up SoftWindows using commands on the **Setup** menu.

Use **PC Serial Ports...** and **PC Printer Port...** to set up the emulated PC ports.

Use **PC Floppy Disks...** and **PC Hard Disks...** to specify how the PC disk drives are emulated on the workstation, and **Mac/PC Shared Folders...** to set up Macintosh folders as PC drives.

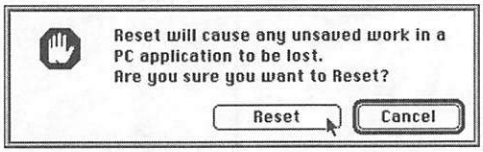
Use **PC Memory...** to set up the amount of memory you want to use.

These commands are described in greater detail in the following pages.

Resetting SoftWindows

After changing any of these settings, which would correspond to a hardware change on a real PC, SoftWindows has to be reset.

The following dialog box is displayed to warn you and give you the option of canceling the change.



Setting up disk drives

PCs identify the different types of disk drive using the drive letters A: to Z:.

The table below shows the significance of the different drive letters and how they are set up when you first install SoftWindows.

You can set up the floppy disk drives A: and B:, the hard disk drives C: and D:, and the shared folders E:, G:, and H:, using the appropriate options on the **Setup** menu.

Drive letters

The number of drives available is determined by the value of LASTDRIVE in the CONFIG.SYS file. The default setting, LASTDRIVE=H, makes drives up to H: available.

The FSADRIVE command specifies which drives you want to use as Mac/PC shared folders. By default the AUTOEXEC.BAT file includes the line:

```
C:\INSIGNIA\FSADRIVE E: G: H:
```

to make drives E:, G:, and H: available as Mac/PC shared folders. If you need additional shared folders you should increase the value of LASTDRIVE, and add additional drives to FSADRIVE.

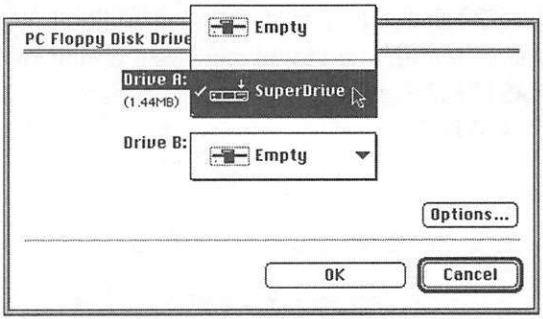
Drive	*Default*	*Description*
A:	Internal	The floppy disk drive.
B:	Empty	Additional floppy disk drive.
C:	SoftWindows Hard Disk File C	The startup, or boot, hard disk drive.
D:	Empty	Additional hard disk drive.
E:	SoftWindows	Mac/PC shared folder.
F:	Empty	Default for CD-ROM drive.
G:	Empty	Additional Mac/PC shared folder.
H:	Empty	Additional Mac/PC shared folder.

Setting up floppy disk drives

To set up the floppy disk drives A: or B:

➤ Choose **PC Floppy Disks...** from the **Setup** menu.

➤ Select the option you want to use from the **Drive A:** or **Drive B:** pop-up menu:



By default, drive A: is set up as the Macintosh internal SuperDrive and drive B: is empty.

For more information about the floppy disk drive options refer to *PC Floppy Disks... (Setup menu)*, page 88.

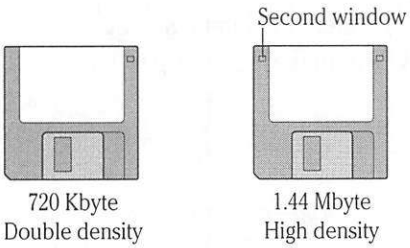
Refer to the **ReadMe-SoftWindows** file for details of third-party drives supported by SoftWindows.

Which disks to use

On a PC, a double density (720 Kbyte) 3.5-inch disk can be formatted as 1.44 Mbytes, but it will not be recognized as a valid PC disk by your Macintosh. Likewise, a high density 3.5-inch disk will only be accepted if it is the correct 1.44 Mbyte format.

SoftWindows does not support 1.6 Mbyte format floppy disks.

The 3.5-inch high-density disks are identified by the drive by a second window, opposite the write-protect window.



You cannot use Macintosh format floppy disks as drives A: or B:.

Setting up hard disk drives

SoftWindows emulates each PC hard disk using a single file on the Macintosh.

SoftWindows Hard Disk File C

The individual MS-DOS files within a SoftWindows hard disk file are accessible only from within SoftWindows and you cannot list them directly from the Finder.

Use Insignia's AccessPC utility to use SoftWindows hard disk files from the Finder.

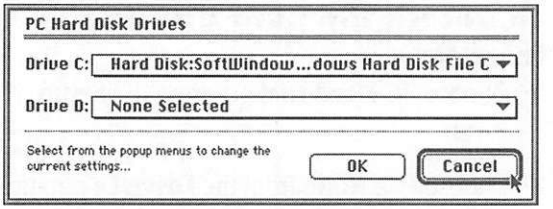
SoftWindows hard disk files can be attached to and detached from either of the PC drives C: and D: without affecting the information stored within the hard disk file.

SoftWindows will always use drive C: to start up unless a floppy disk is in the A: disk drive. You must therefore always have a bootable SoftWindows hard disk file attached to drive C:. This must include the MS-DOS startup files which are installed when the hard disk file is created.

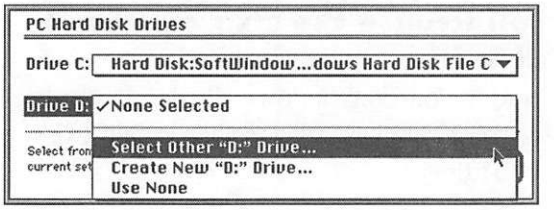
To choose the hard disk file for C: or D:

➤ Choose **PC Hard Disks...** from the **Setup** menu.

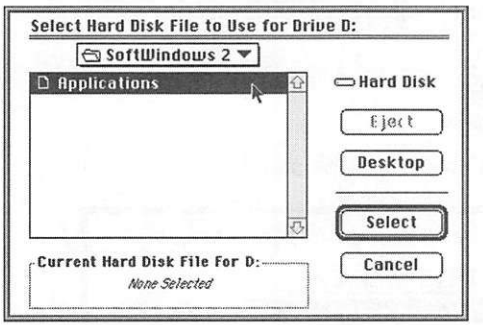
The following dialog box shows the hard disk files selected for drives C: and D:.



➤ Choose **Select Other "C:" Drive...** or **Select Other "D:" Drive...** from the appropriate pop-up menu.



The following dialog box lets you select the hard disk file to use:



➤ Select the hard disk file you want to use and click **Select**.

➤ Click **Reset** to restart SoftWindows with the new drive you have specified.

To detach the hard disk file from D:

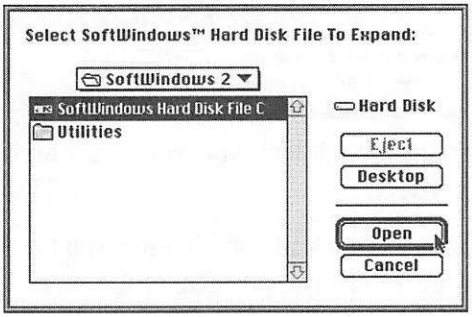
- Choose **PC Hard Disks...** from the **Setup** menu.
- Choose **Use None** from the **Drive D:** pop-up menu.
- Click **Reset** to restart SoftWindows with drive D: unattached.

To increase the size of a hard disk file

- Quit from SoftWindows if the hard disk file you want to expand is set up as the C: or D: drive.
- If the hard disk file contains valuable data make a backup before proceeding.
- Double-click the **HD Expander** icon:

HD Expander

This dialog box appears:

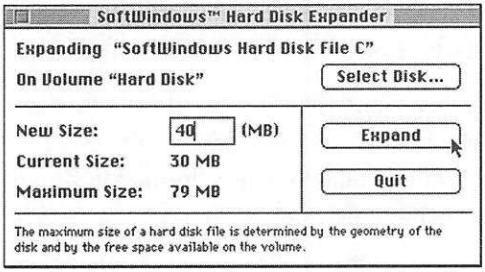


- Select the hard disk file you want to expand, and click **Open**.

Alternatively you can drag the hard disk file icon and drop it onto the **HD Expander** icon.

The **Hard Disk Expander** window shows the current size of your hard disk file.

- Enter the new size, and click **Expand**:



- When the hard disk file has been expanded click **Quit** to quit from the HD Expander.

Hard disk files of less than 128 Mbytes can be expanded up to a maximum size of 128 Mbytes; hard disk files larger than 128 Mbytes can be expanded up to a maximum size of 256 Mbytes.

Creating new hard disk files

You can create a non-bootable (D: drive) hard disk file from within SoftWindows. It is built using the data from the first HDData file, which is installed when you install SoftWindows.

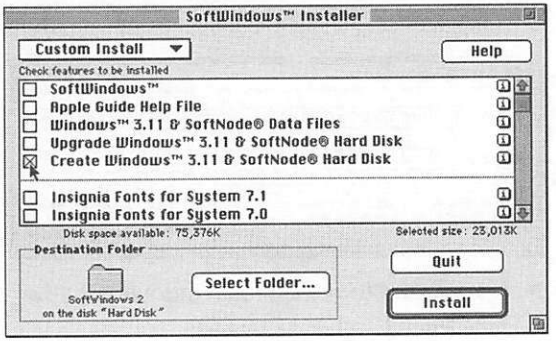
The easiest way of creating a bootable (C: drive) hard disk file is to use the installer. Alternatively, you can create one from within SoftWindows, but to do so you need to have installed the complete set of HDData files; refer to *Installing additional SoftWindows options*, page 15.

To create a new C: drive

➤ Insert the **Win Install 1** installation disk, or the installation CD-ROM, and double-click the **Installer** icon.

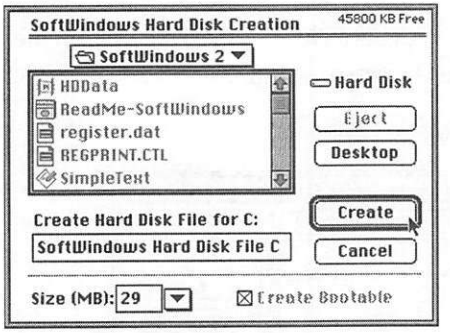
➤ When the welcome screen appears click **Continue...** to display the installer dialog box.

➤ Choose **Custom Install** from the pop-up menu, and select the **Create Windows 3.11 & SoftNode Hard Disk** option:



➤ Click **Install**.

This dialog box appears:



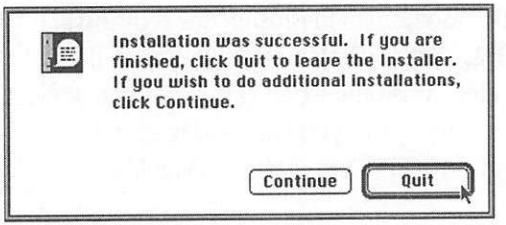
➤ Enter a name for the new hard disk, and choose the size from the **Size** pop-up menu.

If a new name is not entered the existing hard disk file will be overwritten and the data will be lost.

➤ Click **Create** to create the hard disk file.

The installer then copies files to the new hard disk file, and you will be prompted to insert the other installation disks when necessary.

This dialog box informs you when the hard disk file has been created successfully.

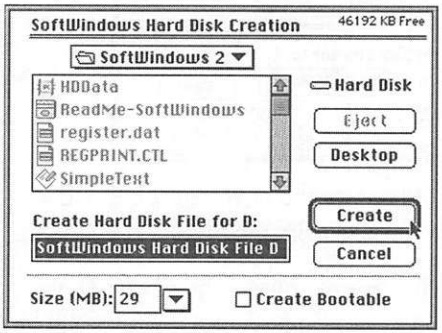


To create a new D: drive

➤ Choose **PC Hard Disks...** from the **Setup** menu.

➤ Choose **Create New "D:" Drive...** from the **Drive D:** pop-up menu.

This dialog box appears:



➤ Enter a name for the new hard disk file.

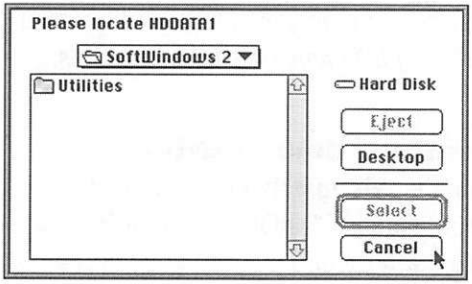
➤ Select the size from the pop-up menu. The options available will depend on the amount of free space on your Macintosh hard disk.

The **Create Bootable** option installs Windows, MS-DOS, and the Insignia utility files so that the hard disk file can be used as drive `C:`. To use this option you must have installed the SoftWindows data files using the **Windows 3.11 & SoftNode Data Files** option in the installer's Customize dialog box. Alternatively, if you are using CD, you can read these files directly from the installation CD-ROM.

➤ Click **Create** to create the hard disk file you have specified.

The new hard disk file will be created using the information in the HDData file, and the other data files if you checked **Create Bootable**.

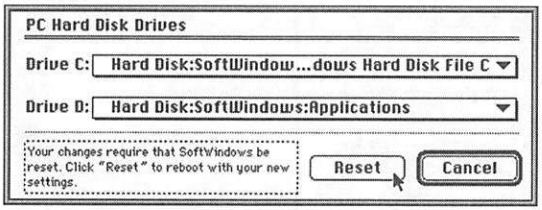
If SoftWindows cannot locate the HDData files the following dialog box will be displayed:



➤ Locate the data files on your hard disk, or on the installation CD-ROM if you are using CD.

If necessary, click **Cancel** and install the SoftWindows data files using the installer as described above.

SoftWindows will then need to be reset to use the new drive you have created.



➤ Click **Reset** to restart SoftWindows with the new drive you have created.

Moving PC files to and from the Macintosh

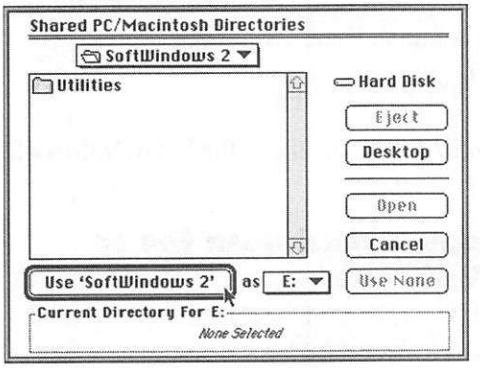
SoftWindows lets you designate one or more Macintosh folders to be used as drives in the MS-DOS filing system.

You can then work with files in these shared folders using either Macintosh or MS-DOS and Windows applications.

To set up a Macintosh folder as a PC drive

➤ Choose **Mac/PC Shared Folders...** from the **Setup** menu.

This dialog box lets you select the folder to use and the PC drive you want to assign it to.



➤ Choose the drive you want to use from the pop-up menu.

By default, you can choose any drive from `E:` to `H:`. Any drive letters already in use, such as for CD-ROMs, will be grayed out.

➤ Select the Macintosh folder you want to use, so that its name appears in the button below the list of files.

➤ Click the button to use the folder you have selected.

You can make more drive letters available for Mac/PC shared folders if necessary; refer to *Drive letters*, page 59.

To copy a PC file to the Macintosh

➤ In SoftWindows, copy the file to a drive which has been set up as a Mac/PC shared folder.

For example, if you have set up the **SoftWindows 2** folder as drive `E:`, copy the file with a command such as:

```
COPY MYFILE E: ↵
```

You will then see the file in the **SoftWindows 2** folder.

To copy a Macintosh file to SoftWindows

➤ Put the file in a folder you have set up as a Mac/PC shared folder.

For example, if you have set up the **SoftWindows 2** folder as drive `E:`, you can make a file available on the PC drive `E:` by putting it in the **SoftWindows 2** folder.

Filenames in MS-DOS

Not all Macintosh filenames are valid as MS-DOS names. It is therefore recommended that you adhere to the MS-DOS filename conventions when creating files on the Macintosh that you will want to access from SoftWindows.

MS-DOS filenames have the form:

name.ext

where *name* is eight characters or less, and *ext* is three characters or less.

Filenames can include the letters A–Z, the digits 0–9, and the following symbols:

_ ^ $ ~ ! # % & - { } ( ) @ ' ´

Upper and lower case letters are considered equivalent.

When accessing Macintosh files using a shared folder, an illegal MS-DOS filename that does not adhere to the above restrictions is converted to a legal name.

For example, if you list the files on the `E:` drive the file:

ReadMe-SoftWindows

will be given the name:

`README-S.$PQ`

Setting up CD-ROM drives

SoftWindows allows you to read data CD-ROMs which are compatible with the Microsoft CD-ROM Extensions (MSCDEX) as MS-DOS drives.

The CD-ROMs can be read by MS-DOS commands, if appropriate, or by executing a relevant application program (which is often on the CD-ROM itself).

If you are using a hybrid CD-ROM with both a Macintosh and a PC partition you will need a different CD driver to the one supplied by Apple, such as RapidCD from Insignia Solutions.

To set up the CD-ROM drive F:

➤ Type the following command at the MS-DOS C:\> prompt:

```
USECD ↵
```

To list the files on a CD-ROM

➤ Type the following command at the MS-DOS C:\> prompt:

```
DIR F: ↵
```

To run CD-ROM applications

➤ Follow the instructions supplied with the CD-ROM.

MSCDEX options

The USECD batch file runs the following MSCDEX command:

```
MSCDEX /D:CDROM$$$ /L:F ↵
```

This assigns the CD-ROM to drive F:.

For information about other options available with the MSCDEX command type the following command at the MS-DOS C:\> prompt:

```
HELP MSCDEX ↵
```

For example, you can set up the CD-ROM drive as drive G: with the command:

```
MSCDEX /D:CDROM$$$ /L:G ↵
```

If the CD-ROM drive does not work, check that your CONFIG.SYS file includes the line:

```
DEVICE=C:\INSIGNIA\CDROM.SYS
```

For more information refer to *MS-DOS configuration*, page 125.

Setting up memory

When you first install SoftWindows a recommended PC memory configuration is set up for you, and you should not normally need to change this.

If you do need to change the memory configuration, the easiest way to do so is to reinstall SoftWindows using the **SoftWindows** option in the installer's Customize dialog box.

Alternatively, you can manually configure the PC memory using the following procedure:

- ➤ Increase the SoftWindows application memory size.
- ➤ Change the SoftWindows PC memory configuration.

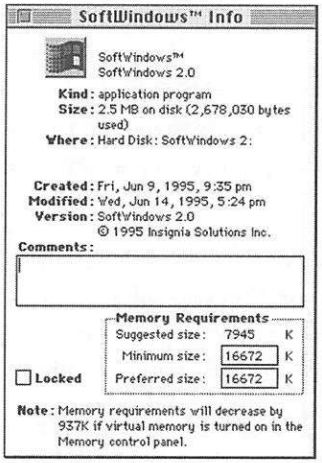
Any of the available memory not used for PC memory is allocated to the DeltaCache, which is used to improve the performance of SoftWindows.

These steps are described in greater detail in the following sections.

To change the application memory size

- ➤ Select the **SoftWindows** icon.
- ➤ Choose **Get Info** from the Finder's **File** menu.

This dialog box shows the Minimum and Preferred sizes to be used for SoftWindows:



For each 1 Mbyte of additional PC memory you want to use you need to increase the minimum and preferred memory sizes by 1030 Kbytes.

For example, to increase the PC memory from 1 Mbyte to 3 Mbytes, while keeping 1 Mbyte of DeltaCache, increase the Preferred size by 2240 Kbytes.

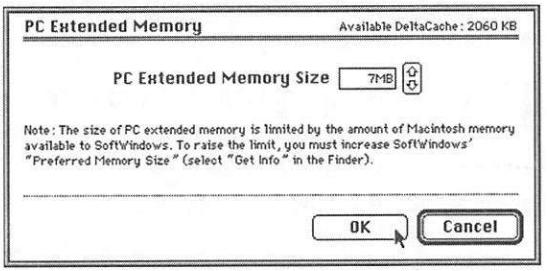
The amount of memory you need also depends on the size of the Windows desktop, and the number of colors used for it.

- ➤ Click the close box, in the top left corner of the **SoftWindows Info** dialog box, to close it.

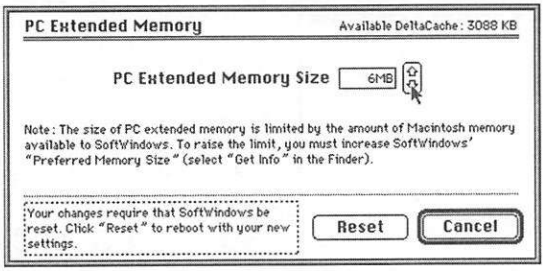
To change the PC memory

➤ Choose **PC Memory...** from the **Setup** menu.

This dialog box shows the current amount of PC memory, and allows you to change it:



➤ Select the amount of memory by clicking the up-arrow and down-arrow buttons:



You can choose any amount of PC memory up to the total amount of available memory, as shown in the top right corner of the dialog box.

Reducing the DeltaCache below about 1024 Kbytes will significantly reduce the performance of SoftWindows.

➤ Click **Reset** to restart SoftWindows with the memory configuration you have selected.

Setting up the Windows desktop

SoftWindows includes a Windows Display Driver that improves the performance of Windows graphics. It also allows you to run Windows in a window of any size, up to 1024 x 1024.

To set up the Windows desktop

➤ Choose **Windows Desktop...** from the **Setup** menu.

The **Windows Setup** window allows you to specify the size and position of the Windows window, and the number of colors to use.

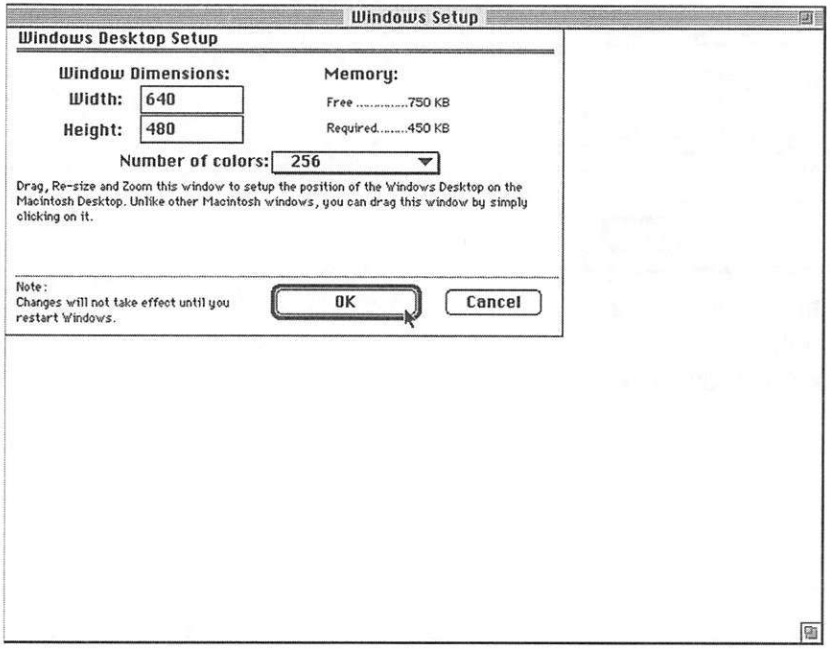
The Macintosh menu bar is hidden so that you can use the full Macintosh screen if you wish.

You can move the **Windows Setup** window to the position you want it on the screen by clicking on any part of the window and dragging to the position you want.

As you change the size and number of colors the memory required is shown. This must be less than the free memory.

If there is insufficient memory for the size you require, increase the application memory size; refer to *To change the application memory size*, page 68.

The changes you make take effect when you next run Windows.



To specify the size for the Windows desktop

➤ Resize the **Windows Setup** window by dragging the size box in the lower right corner of the window.

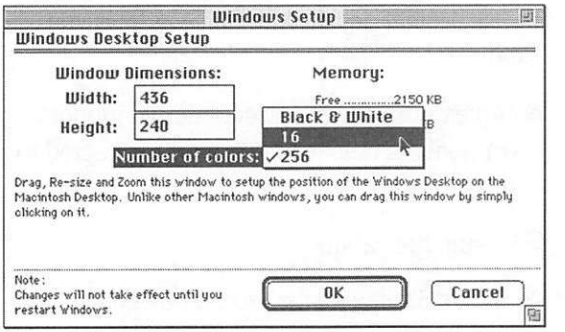
To use the full Macintosh screen

➤ Click the zoom box near the right end of the title bar.

Click the zoom box again if you want to restore the window to its original size.

To select the number of colors for Windows

➤ Select the number you want from the **Number of colors** pop-up menu.



For best performance set the **Number of colors** and your Macintosh **Monitors** control panel to the same setting.

Using modems and other serial devices

The SoftWindows serial ports can be used to connect modems, printers, and other kinds of serial devices to your Macintosh computer's serial (modem or printer) ports.

To use a serial device with SoftWindows you need:

- An external serial device, internal modem, or network device that can be connected to a Macintosh serial port.
- A suitable cable.
- MS-DOS software that communicates via a serial port.
- `COM1:` or `COM2:` assigned to the Macintosh serial port.

To set up a serial port

Use the **PC Serial Ports...** command on the **Setup** menu to set up the ports; refer to *PC Serial Ports... (Setup menu)*, page 99.

Specifications

Data rates

SoftWindows supports the following serial port transmission rates, in bits per second:

300	1200	2400	4800	7200
600	1800	3600	9600	19200

The data transfer rates which SoftWindows can handle depend on the speed of your Macintosh. In general, note the following:

- When sending data from SoftWindows any data rate (baud rate) can be used.
- When receiving data into SoftWindows choose a lower data rate if you are running on a slower Macintosh.

You can trade off speed for block size – at higher speeds keep the data block size small (100-200 bytes).

If the incoming data rate is too high some of the data may be lost and serial communications programs will not be able to connect. Reduce the rate if you have problems.

Protocols

Supported serial port transmission protocols:

Parity:	Even, Odd, None, Mark, or Space.
Data bits:	5, 6, 7, or 8.
Stop bits:	1, 1.5, or 2.

Default settings

By default, `COM1:` is set up by the following `MODE` command in the `AUTOEXEC.BAT` file:

```
MODE COM1:9600,n,8,1
```

This gives the following communications settings:

9600 baud, no parity, 8 data bits, 1 stop bit.

These settings can be changed with another `MODE` command.

Serial devices

This section gives details of the different serial devices that can be used with SoftWindows.

Modems

Hayes-compatible modems and MS-DOS communications programs work well with SoftWindows. Most modems that work with Macintosh applications will also work with MS-DOS software running in SoftWindows.

Not all such communications programs will work, for the simple reason that some of them depend upon reading the status of, or receiving signals from, lines that the Macintosh serial port does not have.

PC-compatible computers have five handshake lines: RTS, CTS, DSR, DTR, and DCD, whereas the Macintosh serial ports have just two: Input Handshake and Output Handshake.

Printers

If you are using a serial printer with SoftWindows, and your PC program is sending output directly to it, you should make sure that you have the correct cable. The printer may need to be configured to match the serial port settings of SoftWindows (see below).

Problems with serial printing may be due to handshaking; that is, the interchange of signals between the program and the printer to ensure that data is not sent before the printer can accept it.

Flow control

The **Flow control** option in the **PC Serial Ports** dialog box converts XON/XOFF software handshaking into hardware handshaking as far as the PC program is concerned. This is only needed because most PC programs use hardware handshaking and a few devices, especially printers, use only software handshaking.

If you are using the correct cable to your printer, and both printer and PC program use hardware handshaking, you should print successfully.

If you have printing problems, try to configure your printer and PC program to use software handshaking.

If your program cannot be configured for software handshaking, make sure that the printer is using XON/XOFF and check **Flow Control** in the **PC Serial Ports** dialog box. SoftWindows will then convert the software signals sent by the printer into emulated hardware signals that your PC program can understand.

Other devices

Other serial devices may or may not work, depending on their requirements and how configurable they are. Almost any device that uses software flow control will work.

Cables

The Apple Peripheral-8 cable or equivalent will work for connecting an Apple modem, an ImageWriter II, or LaserWriter printer to a serial port. For other modems use a Macintosh-to-Hayes cable. For other printers use a Macintosh-to-ImageWriter I cable.

Limitations

Programs that do not work well are those that are extremely timing-sensitive or that rely on serial port lines that are not available on the Macintosh serial port.

SoftWindows has no access to the DSR, DCD, or RI signals, and the RTS line cannot be set up due to the lack of lines. Instead, SoftWindows makes the DSR and RLSD/DCD lines have the same status as the DTR line. RI is always set to off.

Copy-protection locks, also known as dongles, do not work on SoftWindows due to unavoidable timing variations in its processing of serial port signals through the Macintosh serial port driver.

International usage

To use MS-DOS software in countries outside the USA and English-speaking Canada you may need to adjust it for the different keyboard layouts, screen display character sets, and printer character sets required in each country.

SoftWindows includes a special KEYBOARD.SYS file, and custom Windows DLL files, to configure MS-DOS and Windows to match the layouts of international Macintosh keyboards.

An additional facility is supplied for Danish and Norwegian users to provide the ø and Ø characters in place of ¢ and ¥ in printouts, and when using copy and paste.

To use an international keyboard for MS-DOS

➤ Type the following line (or include it in your AUTOEXEC.BAT file):

KEYB *XX*,,C:\INSIGNIA\KEYBOARD.SYS ↵

where *XX* represents the code for the keyboard that you wish to install (see the table opposite). The two-letter code is followed by two commas then the path to the KEYBOARD.SYS file. Note that the only space in the line is just after KEYB; there is no space between the two commas.

Some MS-DOS programs, such as Microsoft Windows, look at the PC hardware directly rather than at the MS-DOS settings and so will ignore the installed KEYBOARD.SYS driver.

The countries and the codes are as follows:

Country	*Code*	*Country*	*Code*
Belgium	BE	Netherlands	NL
Brazil	BR	Norway	NO
Canadian French	CF	Poland	PL
Czech Republic	CZ	Portugal	PO
Slovak Republic	SL	Spain	SP
Denmark	DK	Sweden	SV
Finland	SU	Switzerland (French)	SF
France	FR	Switzerland (German)	SG
Germany	GR	United Kingdom	UK
Hungary	HU	United States	US
Italy	IT	The former Yugoslavia	YU
Latin America	LA		

If there is no obvious \ (backslash) key on the keyboard you can obtain a \ character as follows:

➤ Hold down option (Alt), and type 9 and 2 on the numeric keypad.

On Macintosh keyboards with no numeric keypad press ⌘K to select Keypad mode, and then use the normal numeric keys.

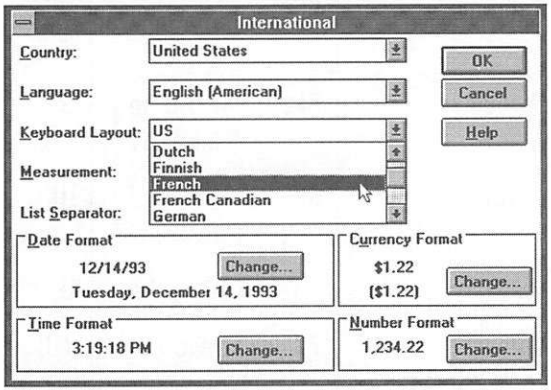
To use an international keyboard for Windows

➤ Double-click the **International** icon in the Windows **Control Panel** window.

International

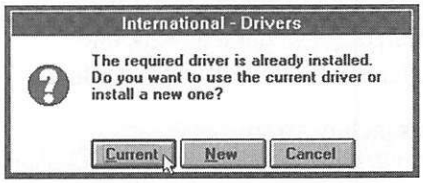
The **International** dialog box will be displayed.

➤ Click the down arrow to open the **Keyboard Layout** drop-down list box, and select the layout you require.



➤ Click **OK**.

The following dialog box lets you select the appropriate installed keyboard driver:



➤ Click **Current** to use the installed driver you have selected.

To set up international printing

The following options are available for international printing.

Epson LQ-2500 printing

The SoftWindows Epson LQ-2500 emulation is complete, including the printer's international character sets. The LQ-2500 fonts provided include the IBM Extended Character Set graphics.

When you set options in the **Epson LQ-2500 Emulation Options** dialog box you are setting up the initial defaults of the printer, just as if you used the control panel of a real LQ-2500. These initial settings may be changed by your MS-DOS program.

If your MS-DOS software takes complete control of the printer, including margin settings, pitch setting, and character set selection, then you should leave the options at the default settings and your printouts will be fine.

PostScript or direct printing

For MS-DOS software that prints via PostScript or directly to an attached PC-compatible printer, the LQ-2500 settings are ignored and will not affect your printouts.

To set up MS-DOS for Denmark or Norway

To get the ø and Ø characters needed by Danish and Norwegian users in printouts and when using copy and paste:

- ➤ Choose **Preferences...** from the **File** menu to display the **SoftWindows Preferences** dialog box.
- ➤ Check the **"Codepage 850" International Support** option, and click **OK**.
- ➤ In the `CONFIG.SYS` file add the lines:

```
COUNTRY=045,850,C:\DOS\COUNTRY.SYS
DEVICE=C:\DOS\DISPLAY.SYS CON=(EGA,850,1)
```

- ➤ In the `AUTOEXEC.BAT` file add the lines:

```
NLSFUNC
MODE CON CODEPAGE PREPARE=((850)C:\DOS\EGA.CPI)
MODE CON CODEPAGE SELECT=850
KEYB DK,850,C:\INSIGNIA\KEYBOARD.SYS
```

- ➤ You must then reset SoftWindows.

The above example is for Denmark; for Norway, replace the country code `045` with `047` and the keyboard code `DK` with `NO`.

Improving the performance of SoftWindows

This section explains how to set up SoftWindows to obtain the best possible performance from your PC applications.

The main factor affecting the performance of SoftWindows is the DeltaCache. In addition, when running Windows, the following three factors have an effect:

- The position and size of the Windows desktop.
- The number of colors used for the Windows desktop.
- The amount of PC memory specified.

DeltaCache

When SoftWindows runs it is allocated the size of memory specified in the **SoftWindows Info** dialog box.

Any memory not used for the SoftWindows application is available for PC memory, or for the DeltaCache if not allocated to PC memory.

The performance of SoftWindows will be significantly reduced if less than 1 Mbyte (1024 Kbytes) is available for the DeltaCache. Increasing the DeltaCache above 1 Mbyte will give a small additional increase in performance.

The Windows desktop

The performance of the Windows desktop is optimal when the whole window is visible on the screen, unobscured by another window.

For best performance the **Monitors** control panel should be set to 256 or 16 colors, and the Windows desktop should match this.

When the Windows desktop is optimal a ✓ is displayed in the title bar. Alternatively, if the title bar is not visible press ⌘-option to change the mouse pointer to a hand.

The hand pointer includes a period to indicate whether the Windows desktop is optimal:

Optimal

Non-optimal

The performance of SoftWindows will also decrease slightly as the size of the Windows desktop is increased.

Memory

Windows needs at least 1 Mbyte of PC memory to run, and will run more efficiently with at least 3 Mbytes of memory. However, you should ensure that at least 1 Mbyte of DeltaCache remains available or the improvement in performance will be lost.

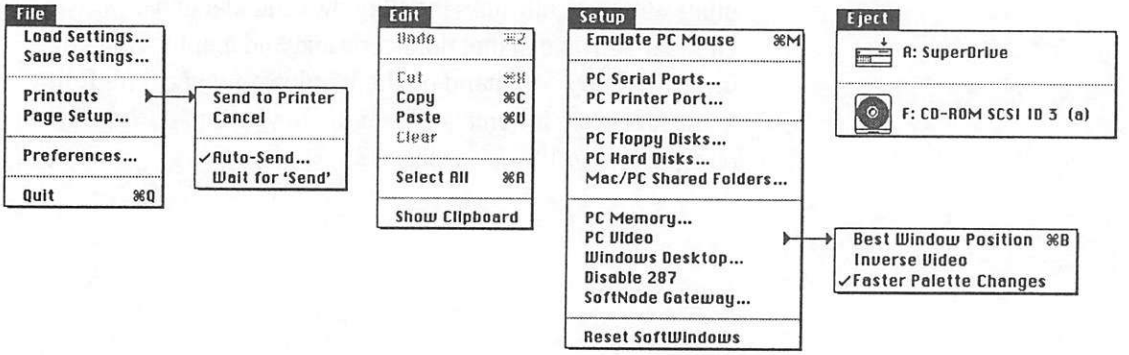
The amount of DeltaCache available is displayed in the top right corner of the **PC Memory** dialog box.

SoftWindows commands

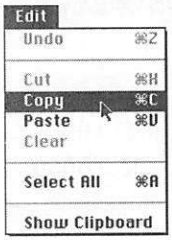
This chapter provides detailed information about each of the SoftWindows menu commands, arranged in alphabetical order for ease of reference.

Menus

The following diagrams show the commands available on the menus in SoftWindows:



Note that the commands **Undo**, **Cut**, and **Clear** on the **Edit** menu have no function in SoftWindows and so are not included in this chapter.



Copy (Edit menu)

Use the **Copy** command to copy highlighted text or graphics so that you can paste them into another Macintosh application.

When you copy a highlighted area of the screen SoftWindows places it onto the clipboard, replacing the previous contents of the clipboard.

Holding down the option key when choosing **Copy** replaces return characters with spaces, so that the text will be treated by a word processor as a single paragraph.

Using Windows

When you are using Windows, the SoftWindows SmartCopy utility automatically links the Windows and Macintosh clipboards. You can therefore copy text and graphics directly using the **Copy** command on the Windows application's **Edit** menu. For more information refer to *Copying and pasting text and graphics in Windows*, page 42.

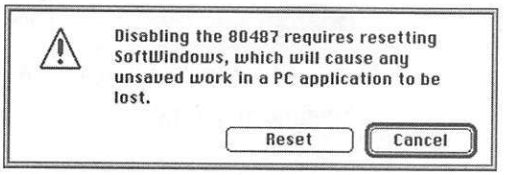
Disable/Enable 487 (Setup menu)

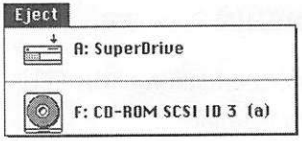
Use the **Disable 487** command to disable emulation of the FPU, using the PowerPC math co-processor in your Macintosh.

You may need to select this command if you are running an MS-DOS application which is written to use the FPU, and which does not appear to run properly with the emulated math co-processor. The Macintosh math co-processor has a different precision than the emulated FPU, so there may be a few applications that do not run properly.

When you choose **Disable 487** the command changes to **Enable 487**.

After choosing either command this dialog box is displayed to allow you to reset SoftWindows or cancel the command:





Eject menu

Use the **Eject** menu to eject a floppy disk from a floppy disk drive or a CD-ROM from a CD-ROM drive.

The **Eject** menu shows each of the drives containing an ejectable disk. Choose the drive name to eject a disk from the specified drive. The **Eject** menu can also be used to eject a CD from a CD-ROM drive.

You can also eject a floppy disk by typing one of the following key combinations:

Type this	*To eject a disk in*
⌘ Shift 1	Internal drive 1.
⌘ Shift 2	Internal drive 2.
⌘ Shift 0	External drive.

To eject a dual-format CD-ROM you may also need to eject the Macintosh partition from the Macintosh desktop.

Emulate PC Mouse/Mac Mouse (Setup menu)

Use the **Emulate PC Mouse** command to use the Macintosh mouse to emulate a Microsoft Bus Mouse.

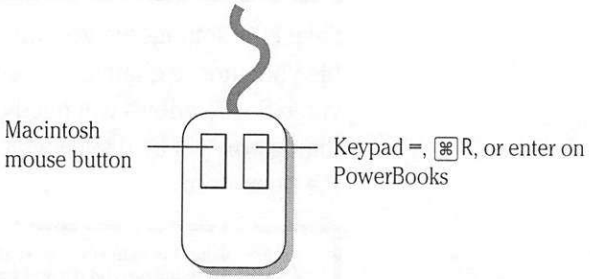
When running Windows the PC mouse is automatically emulated whenever the Macintosh mouse pointer is in the SoftWindows window. Note that, to improve performance, the Windows mouse pointer is slightly reduced in size. Choose **Emulate PC Mouse** if you prefer to work with the full size mouse pointer.

When you choose **Emulate PC Mouse** the command changes to **Mac Mouse**, the Macintosh mouse cursor will disappear, and the SoftWindows menu bar will be unavailable.

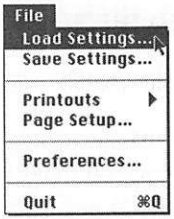
To switch between the two options type ⌘M.

To restore the Macintosh mouse temporarily, so that you can select menu commands, hold down the ⌘ key.

The PC mouse usually has two buttons. The right mouse button is obtained with keypad =, ⌘R, or enter on PowerBooks.



An MS-DOS application will only be able to use the mouse if it supports a Microsoft-compatible mouse.

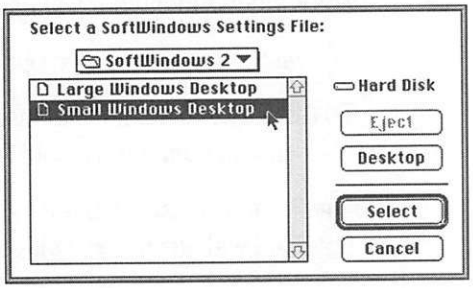


Load Settings... (File menu)

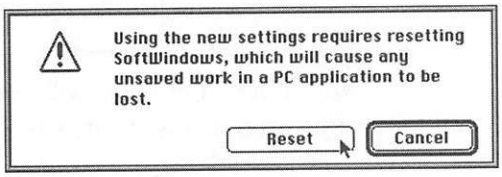
Use the **Load Settings...** command to set up SoftWindows with one of a number of alternative configurations. You create a settings file by setting up SoftWindows in the configuration that you want, and then choosing the **Save Settings...** command on the **File** menu; refer to *Save Settings... (File menu)*, page 108.

The settings file stores information about each of the settings you have selected from the **Setup** menu.

To load a settings file from SoftWindows choose **Load Settings...**. This dialog box appears:



Select the settings file you want and choose **Select**. If the settings file you choose changes the configuration of disks, memory, or video SoftWindows will need to be reset, and the following dialog box will be displayed to allow you to proceed or cancel the operation:



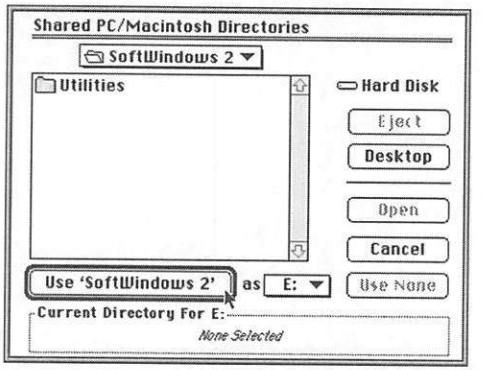
You should close all Windows applications and exit Windows before resetting SoftWindows.

You can start SoftWindows with particular settings by double-clicking the appropriate settings file, or by dragging it onto the **SoftWindows** icon.

Mac/PC Shared Folders... (Setup menu)

Use the **Mac/PC Shared Folders...** command to set up SoftWindows drives. This allows you to share files between SoftWindows and the Macintosh.

When you choose **Mac/PC Shared Folders...** this dialog box appears:



To assign an MS-DOS drive to a folder on the Macintosh first select the drive you want to assign from the pop-up menu. Initially, SoftWindows provides the shared drives `E:`, `G:`, and `H:`.

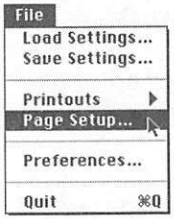
Locate the Macintosh folder you want to use so that it appears as the title of the **Use** button. Then click this button to assign the specified folder to the selected drive.

Click in the space below the list of files to select the currently-displayed folder.

Alternatively, click **Use None** to remove the association with the selected drive.

To run programs on a CD-ROM refer to *Setting up CD-ROM drives*, page 67. If any drive letters are already in use for CD-ROM drives they will be dimmed and unavailable for use as shared drives.

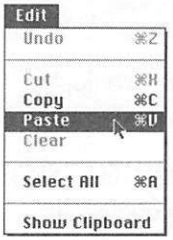
For more information about using shared drives, refer to *Moving PC files to and from the Macintosh*, page 65.



Page Setup... (File menu)

Use the **Page Setup...** command to set up the printer so that you can print from SoftWindows.

For more information about printing from SoftWindows refer to *Printing from SoftWindows*, page 51.



Paste (Edit menu)

Use the **Paste** command to enter text from the clipboard into SoftWindows, character by character. You cannot use the **Paste** command for graphics and, if the clipboard does not contain text, the **Paste** command will be dimmed on the menu.

You can paste text previously copied from the SoftWindows MS-DOS window using the **Copy** command on the **Edit** menu; refer to *Copy (Edit menu)*, page 80. Alternatively, you can paste text cut or copied from another Macintosh application.

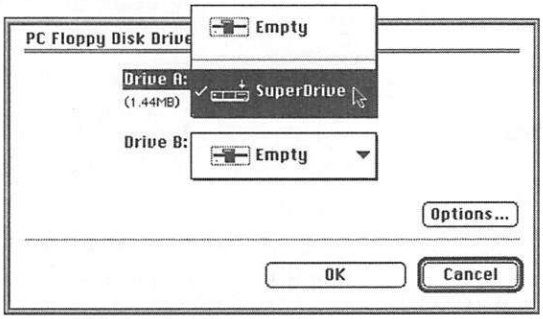
Using Windows

When you are using Windows, the SoftWindows SmartCopy utility automatically links the Windows and Macintosh clipboards. You can therefore paste text and graphics directly using the **Paste** command on the Windows application's **Edit** menu. For more information refer to *Copying and pasting text and graphics in Windows*, page 42.

PC Floppy Disks... (Setup menu)

Use the **PC Floppy Disks...** command to set up the two floppy disk drives, A: and B:, supported by SoftWindows.

When you choose the **PC Floppy Disks...** command this dialog box allows you to choose which floppy disk drive you want to use with SoftWindows:



The alternatives for either drive are as follows:

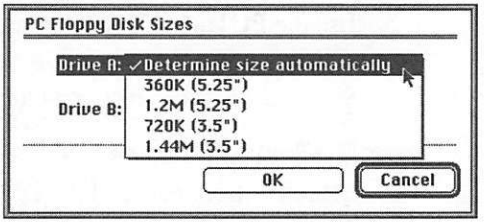
Select this option	*To use this drive*
Empty	None.
SuperDrive	An internal or external SuperDrive attached to the Macintosh.
Other	Any compatible external drive attached to the Macintosh.

The capacity of the drive is shown below the **Drive A** or **Drive B** label in the dialog box. In the case of some third-party external drives SoftWindows cannot determine the drive capacity, in which case you may need to specify the capacity manually.

To eject a floppy disk use the **Eject** menu; see *Eject menu*, page 82.

Note that 1.6 Mbyte floppy disks are not supported.

Click **Options...** to display the following dialog box and select the correct option from the pop-up menu:



Specify the maximum capacity of the drive, not the disk density being used.

Refer to the **ReadMe-SoftWindows** file for details of third-party drives supported by SoftWindows.

PC Hard Disks... (Setup menu)

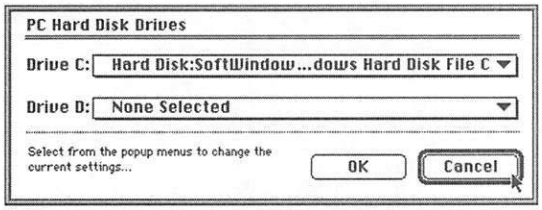
Use the **PC Hard Disks...** command to set up the hard disk drives, C: and D:, supported by SoftWindows. Each SoftWindows hard disk is a file on the Macintosh.

The SoftWindows hard disk files can be attached to and detached from either of the PC drives C: or D: without affecting the information stored within the hard disk file.

SoftWindows will always use drive C: to start up unless a floppy disk is in an attached disk drive. You must therefore always have a SoftWindows hard disk file containing the MS-DOS startup files attached to drive C:. The MS-DOS startup files are automatically installed when you create a hard disk file from the installer, or when you create a new bootable hard disk file from within SoftWindows.

Setting up hard disk drives

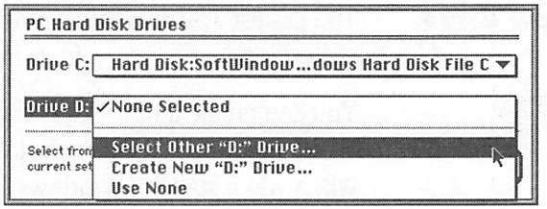
When you choose **PC Hard Disks...** this dialog box appears:



You set up each drive using a pop-up menu of options.

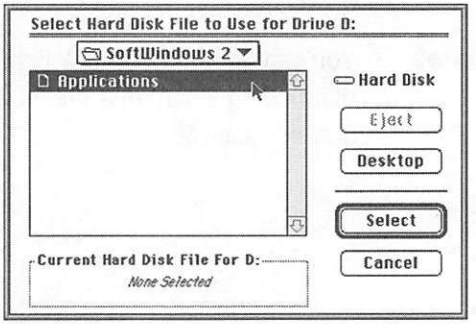
The **Drive C:** menu initially shows the name of the SoftWindows hard disk file selected for that drive. If the previously selected hard disk file has been moved or is missing the menu will show the message **Can't find...**, followed by the name of the file.

To change either drive select the appropriate option from the drive's pop-up menu.



Selecting another drive

Choose **Select Other "C:" Drive...** or **Select Other "D:" Drive...** to select another SoftWindows hard disk file for the drive. This dialog box appears:



Choose the SoftWindows hard disk file you want to assign to the drive.

The box in the lower left corner of the dialog box shows the name of any currently-selected hard disk file. Click this to show other hard disk files and folders in the same folder.

If you are changing the SoftWindows hard disk file assigned to drive `C:` or `D:` SoftWindows will need to be reset to enable the new disk to be used. This dialog box allows you to proceed or cancel the operation:

You should close all Windows applications and exit Windows before resetting SoftWindows.

Creating a new drive

The easiest way to create a new `C:` drive is to use the Customize option in the installer; refer to *To create a new C: drive*, page 63.

You can create a new empty hard disk file for drive `D:` using the HDData data file, which is installed by the **Easy Install** option when you install SoftWindows. For information about how to do this refer to *To create a new D: drive*, page 64.

Leaving drive D: unattached

Choose **Use None** if you do not want to attach a SoftWindows hard disk file to drive `D:`. This option is not available for drive `C:`.

Increasing the size of a hard disk file

You can use the Hard Disk Expander utility to increase the size of an existing hard disk file. Refer to *To increase the size of a hard disk file*, page 62.

PC Memory... (Setup menu)

Use the **PC Memory...** command to choose how much PC memory is available for your PC applications.

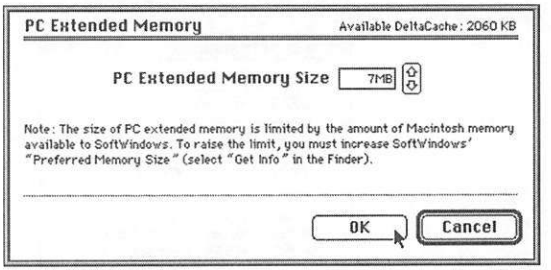
SoftWindows provides extended memory, the type used by most current PC applications.

If your application specifies that it needs expanded memory, also referred to as LIM or EMS (Lotus, Intel, Microsoft Expanded Memory Specification), you can allocate some of the memory to expanded memory using the `EMM386` expanded memory emulator. For example, to use 2 Mbytes of extended memory as expanded memory include this line in the `CONFIG.SYS` file:

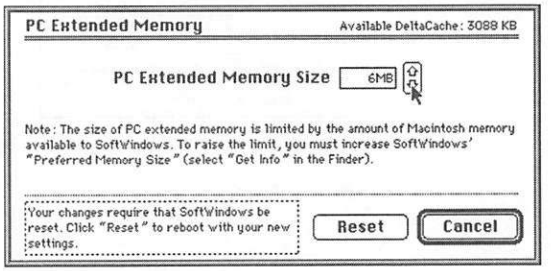
```
DEVICE=C:\DOS\EMM386.EXE 2048
```

Changing PC memory

When you choose **PC Memory...** the following dialog box shows the current size of the PC memory and allows you to change it:



Choose the amount of memory by clicking the up-arrow and down-arrow buttons.



Any of the available memory not allocated to PC memory is used for DeltaCache, which improves the performance of SoftWindows. The size of the DeltaCache is shown in the top right corner of the dialog box, and it is recommended that you leave at least 1024 Kbytes available for it.

If the required amount of memory is not available, adjust the application memory size as described on the next page.

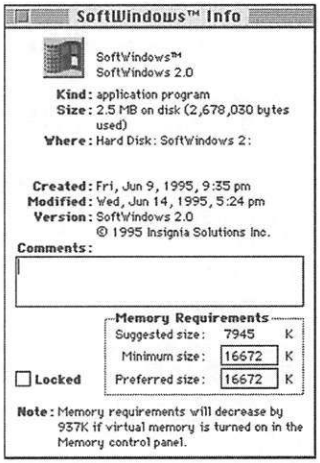
Click **Reset** to reset SoftWindows or **Cancel** to continue without changing the PC memory setting.

You should close all Windows applications and exit Windows before resetting SoftWindows.

Increasing the application memory size

To make more memory available for PC memory you need to increase the application memory size for SoftWindows by 1030 Kbytes for every 1 Mbyte of additional PC memory you want to use.

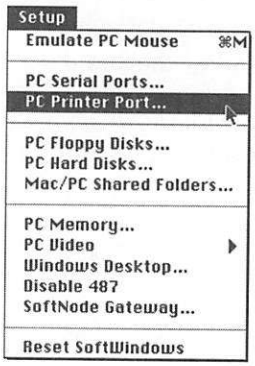
To do this select the **SoftWindows** icon and choose **Get Info** from the Finder's **File** menu.



Enter the new size in both the **Minimum size** and the **Preferred size** boxes.

The total amount of free memory, as shown in the top right corner of the **PC Memory** dialog box, is used as DeltaCache to improve the performance of the SoftWindows PC emulation.

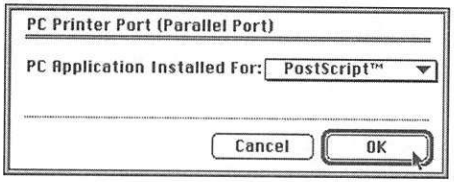
Reducing the amount of memory available for DeltaCache may adversely affect the performance of SoftWindows.



PC Printer Port... (Setup menu)

Use the **PC Printer Port...** command to select the type of printer emulation to be used for the output from `LPT1:`, the standard MS-DOS printer port.

When you choose **PC Printer Port...** this dialog box appears:

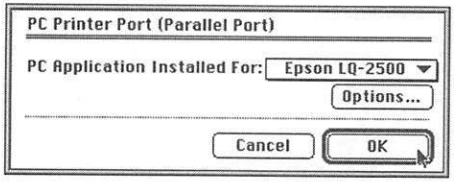


PostScript

PostScript is the default option. Choose this if your Macintosh has access to a PostScript printer, such as a member of the Apple LaserWriter family, and you are using Windows or one of the few MS-DOS applications that support PostScript. SoftWindows will send the output to the printer without conversion.

Epson LQ-2500

Choose **Epson LQ-2500** for most MS-DOS applications or if your Macintosh printer is not a PostScript printer. SoftWindows will convert the output and format it appropriately for the Macintosh printer selected in the Macintosh Chooser.

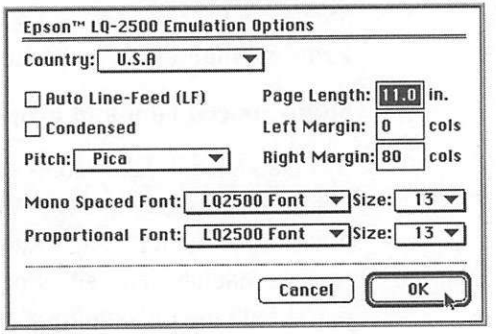


This option supports the IBM extended character set, including graphics characters, and you should choose this if you want to use the **Print Screen** command or the `PRINT` command from MS-DOS.

The **Epson-LQ-2500** option uses the Insignia fonts to give the correct fonts when printing, and these are installed automatically by the Easy Install option. If you need to install them refer to *Installing additional SoftWindows options*, page 15.

Epson LQ-2500 emulation options

Click **Options...** to set up the Epson LQ-2500 emulation options. These correspond to the most important options available on the Epson LQ-2500. This dialog box appears:



Country

Allows up to 12 special characters to be printed, depending on the country selected. If you are using an application designed for a different national language, select the language you want to use from the pop-up menu.

If **"CodePage 850" International Support** is checked in the **SoftWindows Preferences** dialog box, **Country** should be set to **U.S.A** only.

Auto Line-Feed (LF)

Prints a line feed after every carriage return. If your printed output has unwanted double spacing the application is already including line feeds and you should uncheck this option.

Condensed

Condenses the characters horizontally to 60%. Check this option if you want to fit 132 column printing across the width of US letter size or A4 paper.

Pitch

Choose the pitch setting you want from the pop-up menu.

Pica, the default, gives 10 characters per inch and is the recommended setting.

Elite (12 characters per inch) and **15 pitch** (15 characters per inch) reduce the horizontal spacing to fit more characters on a line. The character size and line spacing are set by the **Mono Spaced** font size.

Proportional selects proportional printing.

Mono Spaced Font and Proportional Font

By default, two LQ-2500 fonts are selected which emulate the character sets and spacing of the monospaced and proportional fonts found on an LQ-2500. Alternatively, you can select any font on your Macintosh for either of these two fonts. For best results you should use only monospaced fonts (such as Courier or Monaco) for the **Mono Spaced Font** option. The font size chosen for the **Proportional Font** option should be similar to that already chosen for the monospaced font, because the size selected for the monospace font governs the character size and line spacing of the proportional font as well.

Page Length

Specifies the length of the printed area to the nearest 0.5 inches.

The **Page Length** is initially set to the length of the paper selected in the **Page Setup** dialog box; for example, 10 inches for US Letter paper.

Left Margin

Specifies the number of columns used for the left margin. At the default **Pica** pitch there are 10 columns per inch.

You can ignore this option if you are using an application, such as a word processor, which sets the margins itself.

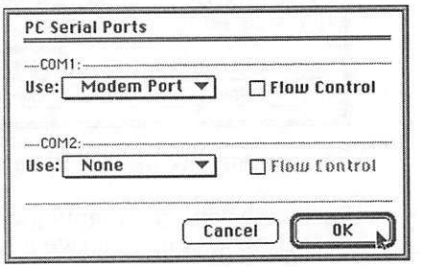
Right Margin

Specifies the number of columns to be used for the right margin. The right margin will only need to be set if the application is assuming a narrower page width and the lines of print are wrapped round, or the application is assuming a wider page width and the lines of print run over the paper edge.

PC Serial Ports... (Setup menu)

Use the **PC Serial Ports...** command to emulate the standard serial ports provided on a PC using the Macintosh modem and printer ports.

When you choose **PC Serial Ports...** this dialog box shows which Macintosh serial port is being used to emulate each of the PC serial ports, `COM1:` and `COM2:`.



For each PC serial port a pop-up menu lets you choose one of the following options:

Select this option	*To do this*
Modem Port	Use the Macintosh modem port.
Printer Port	Use the Macintosh printer port.
None	Leave the port unassigned.
Text File...	Send output to a Macintosh text file document. No input is allowed.

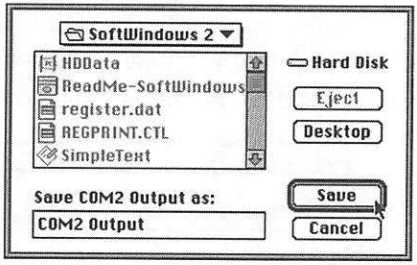
Select **Flow Control** to use handshaking, if available. It allows SoftWindows to communicate with slow serial printers without losing data by halting the flow of data until the printer is ready.

If either Macintosh port is already in use by the LocalTalk network the corresponding option will be dimmed on the pop-up menu.

Saving output to a file

Select **Text File...** to send serial output to a Macintosh text file document, which can then be used by another application or printed at a later date.

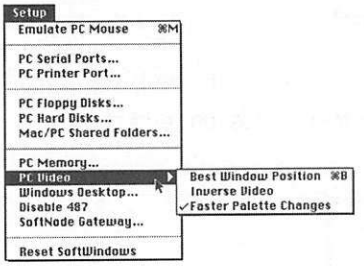
When you choose **Text File...** from the pop-up menu this dialog box appears:



Enter a name for the text file and click **Save** to create the file.

Each time you send output to the serial port it will be added to the end of the file.

For more information about interfacing serial devices to SoftWindows, refer to *Using modems and other serial devices*, page 72.



PC Video (Setup menu)

Use the **PC Video** command to change options affecting the SoftWindows MS-DOS window.

SoftWindows emulates a Video 7 Super VGA display, which provides a resolution of up to 800 x 600 with up to 16 colors, or up to 640 x 480 with up to 256 colors.

Best Window Position

Choose **Best Window Position** to make the whole of the SoftWindows window visible. If your screen has a resolution of 640 x 480, this will hide the menu bar to display the full SVGA PC screen.

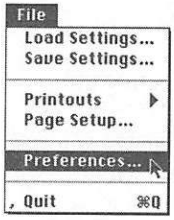
To display the menu bar when the menu bar is hidden hold down the ⌘ key or type ⌘B.

Inverse Video

If you are working with the **Monitors** control panel of your Macintosh set to fewer than 16 colors or grayscales you can choose **Inverse Video**. This changes the SoftWindows display between a normal PC display with white characters on a black screen, and a Macintosh display with black characters on a white screen.

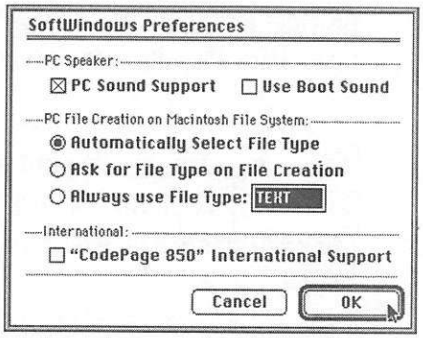
Faster Palette Changes

Faster Palette Changes uses the Macintosh palette to give faster animation in PC applications that use palette changes. However, it may give incorrect colors in some situations because two colors are reserved by the Macintosh system, so you may need to experiment to obtain the best results.



Preferences... (File menu)

Choose **Preferences...** to customize the way that SoftWindows works. When you choose **Preferences...** this dialog box appears:



Select the preferences you want, as described below, and click **OK**.

SoftWindows Prefs

Your preferences are saved in the **SoftWindows Prefs** file when you quit from SoftWindows. This file is located in the **Preferences** folder within the System Folder.

PC speaker

These options specify how SoftWindows emulates the PC speaker.

Check **PC Sound Support** to give MS-DOS and Windows sound using the Macintosh sound system.

Check **Use Boot Sound** if you want SoftWindows to simulate the sounds made by a PC on start-up.

PC file creation on Macintosh file system

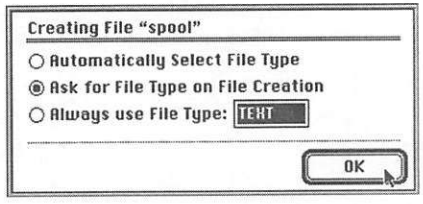
These options let you choose what types of Macintosh documents are created when SoftWindows creates MS-DOS files in Macintosh folders. For details of how to set up shared folders, refer to *Mac/PC Shared Folders... (Setup menu)*, page 85.

Choose **Automatically Select File Type** to assign standard SoftWindows file icons to the files you create, based on their extension:

Document icon	*Used to identify*	*Assigned to these extensions*
PCFA	MS-DOS programs.	`.COM` or `.EXE`
PCFL	PC binary files.	`.BIN`, `.DVR`, `.OBJ`, `.OVL`, `.OVR`, or `.SYS`
TEXT	MS-DOS data files.	All other extensions.

MS-DOS data files can be recognized by most Macintosh applications, including TeachText, MacWrite II, Microsoft Word, Excel, and WordPerfect.

Choose **Ask for File Type on File Creation** if you want to be prompted to enter the four-character type to be used each time a file is written to a shared drive from SoftWindows. This dialog box appears:



Enter the file type for the file you are creating. Alternatively, choose one of the options **Automatically Select File Type** or **Always use File Type** to specify the file type automatically and change the preferences for all subsequent files created by SoftWindows.

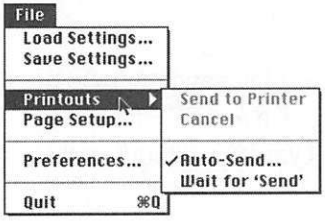
Choose **Always use File Type** if you want to use a specified file type for every file regardless of its extension. The default type is `TEXT`, but you can specify any other four-character type.

CodePage 850 International Support

You configure MS-DOS to use a different character set by loading and selecting a code page. Refer to the *Microsoft MS-DOS User's Guide* for more information.

When you check **"CodePage 850" International Support** SoftWindows changes the character set used for printing with the LQ-2500 option to make it consistent with the code page 850 character set. This gives the characters ø and Ø (found in the Danish and Norwegian alphabets) in place of ¢ and ¥, and ensures that they can be copied and pasted.

After changing the **"CodePage 850" International Support** setting you need to reset SoftWindows to make the change take effect.



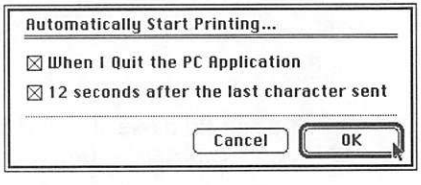
Printouts (File menu)

Use the **Printouts** command, and the appropriate command from the submenu, to control how output is sent from your MS-DOS program to be printed.

You can either choose to have printing happen automatically or when you specify.

Auto-Send...

Choose **Auto-Send...** to specify when printing should start automatically. This dialog box appears:



Check **When I Quit the PC Application** to print when you exit from the MS-DOS application in SoftWindows.

Check **12 seconds after the last character sent** to print 12 seconds after the application has stopped sending output, even though it may still be running.

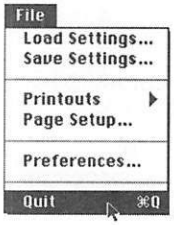
If either or both of these options is checked a ✓ will be displayed beside the **Auto-Send...** command in the **Printouts** submenu.

Wait for 'Send'

Choose **Wait for 'Send'** if you want to specify when printing should begin. Output will not be sent to the printer until you select **Send to Printer**. Use this option if you expect to produce a number of small printouts at irregular intervals and you do not want them printed until they are all completed.

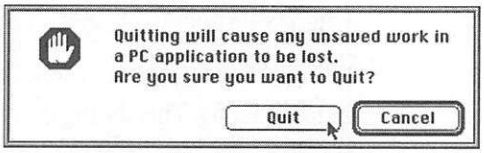
Choose **Cancel** to discard any print output that has not yet been printed.

Send to Printer and **Cancel** will be dimmed unless there is some output waiting to be printed.



Quit (File menu)

Use the **Quit** command to leave SoftWindows and return to the Finder. This is equivalent to switching off a real PC. This dialog box warns you that work can be lost if you quit without exiting from PC applications or saving files:



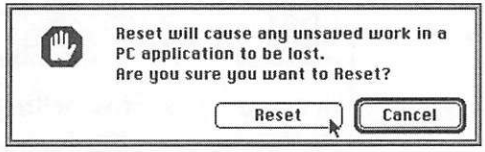
Choose **Cancel** to cancel the command or **Quit** (or type ⌘Q) to quit.

You should close all Windows applications and exit Windows before quitting SoftWindows.

Reset SoftWindows (Setup menu)

Use the **Reset SoftWindows** command to re-start SoftWindows. This is equivalent to turning a PC off and on again.

This dialog box warns you that work can be lost if you have not exited from PC applications or saved files before resetting:

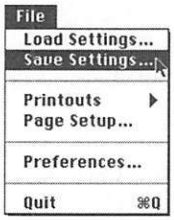


Click **Cancel** to cancel the command or **Reset** to restart SoftWindows.

Just like a real PC, holding down Ctrl Alt Delete together produces an immediate reset without the warning dialog box.

The equivalent keys on the Macintosh keyboard are control-option-⌘ D, or control-option-del on an extended keyboard. Refer to *Using the keyboard and mouse*, page 39, for more information.

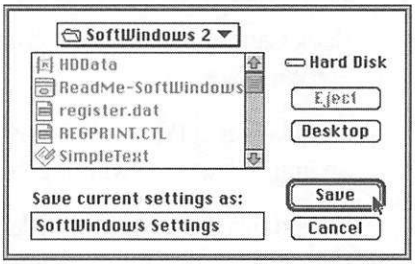
You should close all Windows applications and exit Windows before resetting SoftWindows.



Save Settings... (File menu)

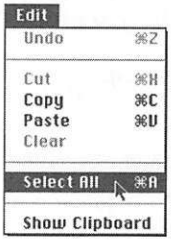
Use the **Save Settings...** command to save the configuration of SoftWindows in a settings file. You can create different settings files for the different configurations of SoftWindows you need to use:

When you choose **Save Settings...** this dialog box appears:



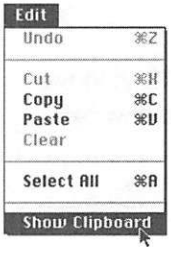
To load a settings file you have created use the **Load Settings...** command.

You can run SoftWindows with particular settings by double-clicking the appropriate settings file or by dragging it onto the **SoftWindows** icon.



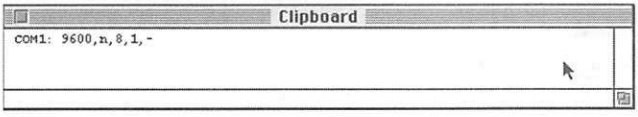
Select All (Edit menu)

Use the **Select All** command to select the whole SoftWindows screen. You can then copy the text from the SoftWindows screen onto the clipboard using the **Copy** command.



Show Clipboard/Hide Clipboard (Edit menu)

Use the **Show Clipboard** command to display the contents of the clipboard.

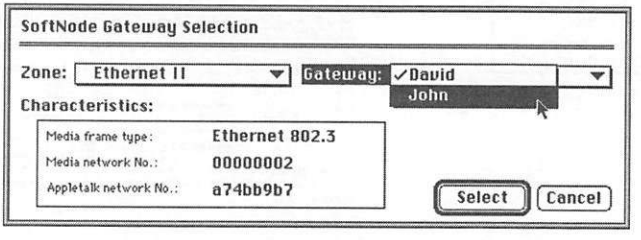


When the clipboard is displayed the command changes to **Hide Clipboard**.

SoftNode Gateway... (Setup menu)

Use the **SoftNode Gateway...** command to select the gateway you want to use for connecting your Macintosh via LocalTalk to a file server on an Ethernet or Token Ring network.

When you choose **SoftNode Gateway...** this dialog box appears:

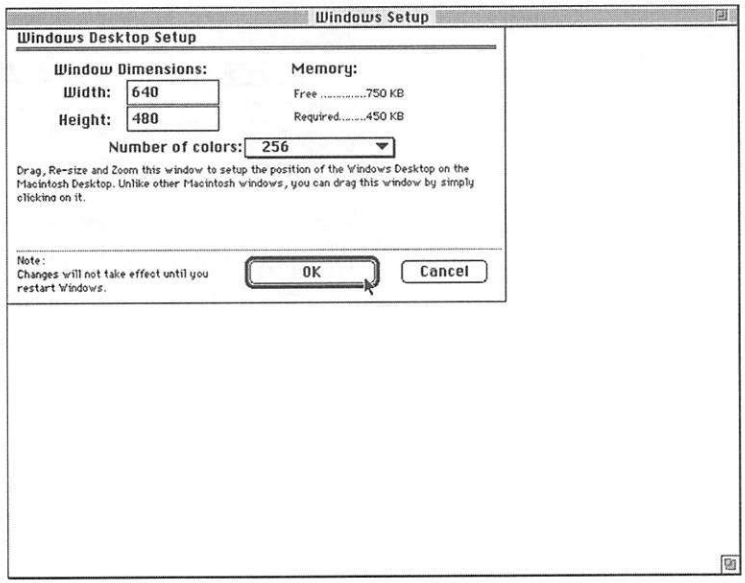


For more information about using the **SoftNode Gateway...** command refer to *Using a LocalTalk gateway*, page 144.

Windows Desktop... (Setup menu)

Use the **Windows Desktop...** command to set up the window you want to use for running Windows.

When you choose **Windows Desktop...** the following window appears, showing you the currently-selected size, position, and number of colors for the Windows desktop:



While the **Windows Setup** window is displayed, the Macintosh menu bar is hidden so that you can use the full Macintosh screen for Windows if desired.

Drag the **Windows Setup** window to indicate where you want the Windows desktop on the screen, by dragging with the mouse pointer on any part of the window.

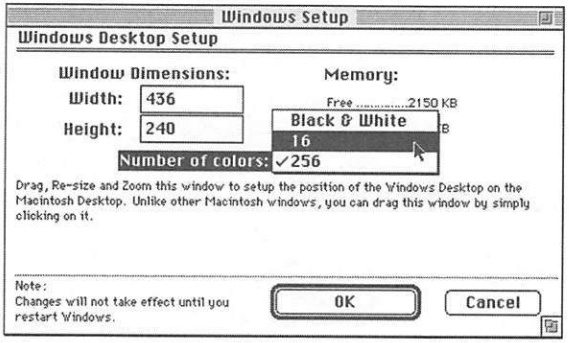
Changing the size

To specify the size for the Windows screen, resize the **Windows Setup** window by dragging the size box in the lower-right corner of the window or enter the size in the **Width** and **Height** boxes.

To use the full Macintosh screen for Windows click the zoom box near the right end of the title bar.

Choosing the number of colors

Select the number of colors to use for Windows from the pop-up menu.



For best performance, set the number of colors to the same as in the **Monitors** control panel of the Macintosh, and ensure that the window is completely on the screen.

When you next run Windows its window will have the size, position, and number of colors you have specified.

Using MS-DOS

This chapter describes the operating system that most PCs use, called MS-DOS. SoftWindows includes version 6.22 of MS-DOS, and this chapter explains the basics of how MS-DOS works and how to use it.

If you are already familiar with MS-DOS you can skip most of this chapter (although the *MS-DOS commands* section may be useful to you later on).

For more information about MS-DOS, read any good book about MS-DOS, such as *DOS for Dummies* from IDG books or the *Microsoft MS-DOS User's Guide*.

Getting started

When you first run SoftWindows you will see some rather cryptic information flash by on your screen. MS-DOS displays this information to let you know how it is configuring your system.

When the information stops scrolling you will see the following prompt:

```
C:\>_
```

This prompt is the basic user interface of MS-DOS. The underscore next to the prompt is the cursor, which shows where text will appear when you type.

On the Macintosh you perform operations on files and folders by manipulating their icons with the mouse or by selecting menu commands from the Finder. In MS-DOS you perform such operations by typing an MS-DOS command at the `C:\>` prompt.

Note that you must press ↵, or Return, after every command you type.

If you have entered a valid command, MS-DOS will carry out the operation you requested. If you have mistyped the command or used an invalid command you will see:

```
Bad command or file name
```

MS-DOS displays this message whenever it does not recognize something.

There are a number of MS-DOS commands. Many are described in the section *MS-DOS commands*, page 120.

MS-DOS basics

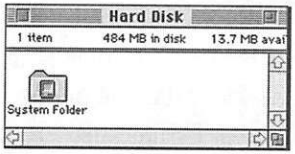
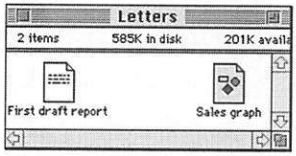
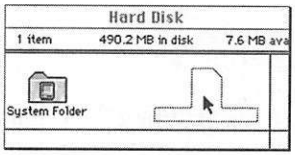
The following table gives some basic information about MS-DOS in terms of the equivalent Macintosh information you are already familiar with:

Macintosh	*MS-DOS*
A file is represented by an icon: Draft report	A file is represented by a filename of up to 8 characters followed by an extension of up to 3 letters: `REPORT1.TXT`

The icon shows the type of the file:
 	
Draft report Sales graph
	The extension (often) shows the type of the file:
	`REPORT.TXT`
	`PICTURE.BMP`

Disks are represented by icons on the desktop: Hard Disk Letters	Disks are represented by drive letters: Hard disks: `C:` `D:` Floppy disk drives: `A:` `B:`

Programs you can run are represented by application icons:
 	
TeachText
	Program files are identified by a `.EXE` extension:
	`EDIT.EXE`
	Batch files contain commands you can run:
	`INSTALL.BAT`

Macintosh	*MS-DOS*
The highest level of the filing system is the disk window:	The highest level of the filing system is called the Root, and is referred to in commands as:
	`C:\`
You see the contents of a drive by opening its window:	You see the contents of a drive by selecting it, for example by typing:
	`A:` ↵
	and then listing the files:
	`DIR` ↵
Files are organized into folders:	Files are organized into directories. You identify the file by specifying the drive, list of directories, and filename, separated by \ characters:
	`C:\REPORTS\REPORT1.TXT`
You copy a file by dragging it from one disk window to another.	You copy a file by using the `COPY` command:
	`COPY C:\REPORT1.TXT A:` ↵

Installing and running MS-DOS applications

To install an MS-DOS application you should follow the installation instructions in the manual supplied with the application.

MS-DOS software is typically supplied on one or more floppy disks, and to install the program you copy the files from these disks to your PC hard disk. To simplify the installation process most MS-DOS programs provide a batch file which automatically copies the files for you. The batch file is typically called `SETUP.BAT` or `INSTALL.BAT` and you run it by typing `SETUP` or `INSTALL` at the `A:\>` or `B:\>` prompt.

Installing from 3.5-inch PC disks

The simplest way of installing PC software is to install directly from 3.5-inch installation disks.

A typical sequence would be as follows:

- Choose **PC Floppy Disks...** from the **Setup** menu and check that **Drive A:** is set to **SuperDrive** to use the Macintosh internal floppy disk drive for drive `A:`.
- Insert the first installation disk.
- Follow the instructions supplied with the software. For example, you may be instructed to type:

  `A:INSTALL` ↵

  or

  `A:SETUP` ↵

If at any stage during the installation you need to change disks, eject the current disk by choosing it from the **Eject** menu (or press ⌘ Shift 1, ⌘ Shift 2, or ⌘ Shift 0 to eject a disk from the internal, second internal, or external drive, respectively).

Note that 1.6 Mbyte floppy disks are not supported.

Installing from 5.25-inch PC disks

If the software is supplied on 5.25-inch disks you have the following options:

- Use a PC to copy the software onto 3.5-inch MS-DOS format disks and then install from these.
- Copy the software across from a PC to a folder on your Macintosh, via a network or a serial connection, attach the folder to SoftWindows as a shared drive, and then install from the files in this folder. Refer to *Moving PC files to and from the Macintosh*, page 65.
- Use an external 5.25-inch floppy disk drive. Refer to the file **ReadMe–SoftWindows** for details of which devices are supported.

Note that some applications suggest you copy all the required files onto your hard disk before installation. Only do this if the user guide for the application recommends it, and follow the instructions precisely.

Choosing where to install

The installation program will typically give you the choice of where to install the files it is copying from the installation disks.

You have the following options:

Install here	*In this situation*
Drive `C:` or `D:` SoftWindows hard disk file.	If you are sure that the files you are installing will fit on the SoftWindows hard disk file you have created, and that you do not need to access the files using Macintosh applications.
A Macintosh folder set up as a network drive `E:` to `Z:`; refer to *Mac/PC Shared Folders... (Setup menu)*, page 85.	If you are not sure how much space the software you are installing takes up, or you may need to access the files using Macintosh applications.

Note that some PC application installer programs will only install onto a hard disk. Also, some programs will assume that drives `E:` to `Z:` are a PC network, and install additional networking software if you specify these drives.

Disk space requirements

Before installing onto the hard disk check the disk space requirements specified in the PC application's manual, and check the available hard disk space by typing the following command at the MS-DOS `C:\>` prompt:

```
CHKDSK ↵
```

Note that 1048576 bytes = 1 Mbyte.

If necessary, you can create more space using the Hard Disk Expander utility; refer to *To increase the size of a hard disk file*, page 62.

MS-DOS commands

You can type MS-DOS commands at the SoftWindows `C:\>` prompt in exactly the same way as you would on a real PC.

The following list gives the most useful MS-DOS commands; refer to an MS-DOS reference guide for more detailed information.

In the syntax for each command square brackets indicate optional arguments.

You can get information about any command by typing:

```
command /?
```

CD

Changes the current directory.

Syntax

`CD [path]directory`

Example

To change your current directory to `\LOTUS` type:

`CD \LOTUS` ↵

COPY

Copies one or more files between two directories.

Syntax

`COPY [drive:][path]file [drive:][path]file`

Example

To copy a file named `BUDGET.WK1` from the `LOTUS` directory on your `C:` drive to the `D:` drive type:

`COPY C:\LOTUS\BUDGET.WK1 D:` ↵

DEL

Deletes specified files.

Syntax

`DEL [drive:][path]file`

Example

To delete the file named `REPORT.OLD` from the `WP` directory on your `D:` drive type:

`DEL D:\WP\REPORT.OLD` ↵

DELTREE

Deletes a directory and its subdirectories.

Syntax

`DELTREE [drive:][path]directory`

DIR

Lists the files in a directory.

Syntax

`DIR [drive:][path]`

Example

To list the files on your `D:` drive in the `WP` directory type:

`DIR D:\WP` ↵

FDISK

Configures a hard disk for use with MS-DOS.

Syntax

`FDISK`

For more information refer to an MS-DOS reference guide.

FORMAT

Formats a disk.

Syntax

`FORMAT [drive:] [/option]`

Example

To format a 720 Kbyte 3.5-inch floppy disk in the SuperDrive type:

`FORMAT A: /N:9 /T:80` ↵

To format a 1.4 Mbyte 3.5-inch floppy disk in the SuperDrive type:

`FORMAT A:` ↵

Note that you should only format low-density disks in the 720 Kbyte format and high-density disks in the 1.4 Mbyte format. You cannot format disks that have already been formatted in Macintosh format.

To format a hard disk use the **PC Hard Disks...** command; refer to *PC Hard Disks... (Setup menu)*, page 90.

Drives set up as SoftWindows shared drives cannot be formatted.

HELP

Gives help about using an MS-DOS command.

Syntax

`HELP [command]`

Where *command* is the long or short form of the command.

Example

To get help about the FORMAT command type:

`HELP FORMAT ↵`

KEYB

Selects a foreign keyboard character set.

Syntax

`KEYB [xx,,[[drive:][path][file]]]`

where *xx* is a two-letter keyboard code and *file* is the name of the keyboard definition file. For more information refer to *International usage*, page 75.

Example

To use a Spanish Macintosh keyboard to emulate a Spanish IBM keyboard type:

`KEYB SP,,C:\INSIGNIA\KEYBOARD.SYS ↵`

Note that you should always use the full filename as shown in the example. It loads a special Insignia version of the MS-DOS keyboard file. This line can be included in your AUTOEXEC.BAT file.

MKDIR (MD)

Makes a subdirectory.

Syntax

`MKDIR [drive:][path]directory`

Example

To make a directory named PCAPPS on your D: drive type:

`MKDIR D:\PCAPPS ↵`

PRINT

Prints a text file to the printer.

Syntax

PRINT [*drive*:][*path*]*file*

Example

To print the file named TEXT.OUT from the WP directory on your D: drive type:

PRINT D:\WP\TEXT.OUT ↵

Note that after entering a PRINT command you may see the message:

Enter the name of the list device [prn:]

Respond by pressing ↵.

RMDIR (RD)

Removes an empty directory.

Syntax

RMDIR [*drive*:][*path*]*directory*

Example

To remove the empty directory named TEMP from your D: drive type:

RMDIR D:\TEMP ↵

TYPE

Displays the contents of a text file on the screen.

Syntax

TYPE [*drive*:][*path*]*file*

Example

To display the contents of the file TEXT.OUT from the WP directory on your D: drive type:

TYPE D:\WP\TEXT.OUT ↵

XCOPY

Copies files and directories, including their subdirectories.

Syntax

`XCOPY [drive:][path]file [drive:] /S`

Example

To copy all the files and directories from your `C:` drive to your `D:` drive type:

`XCOPY C:\*.* D: /S/E` ↵

MS-DOS configuration

MS-DOS has two configuration files, `CONFIG.SYS` and `AUTOEXEC.BAT`, that you may need to know about. Both are held in the root directory `C:\`.

You can alter both files by using any text editor. For information about using the MS-DOS editor to do this refer to *Editing configuration files*, page 127. But please note that you should only alter the files if you are certain you know what you are doing.

As a precaution, we recommend that you make copies of your `CONFIG.SYS` and `AUTOEXEC.BAT` files and store them away for emergency use. If a disaster does occur you can then copy the files onto your SoftWindows hard disk file to help recovery. You will also find copies of your original `CONFIG.SYS` and `AUTOEXEC.BAT` files in the `INSIGNIA` directory. Finally, under certain situations MS-DOS creates its own backups of these files (usually called `CONFIG.OLD` and `AUTOEXEC.OLD`). If need be, you can use these backups to recover from any disaster.

CONFIG.SYS

This is a text file that contains commands that configure the PC's hardware components. When MS-DOS starts, it carries out the commands in CONFIG.SYS before it does anything else.

The following listing shows the default CONFIG.SYS file:

```
FILES=20
BUFFERS=16
DEVICE=C:\WINDOWS\HIMEM.SYS
DEVICE=C:\INSIGNIA\HOST.SYS
DEVICE=C:\INSIGNIA\EM_DRVR.SYS
DEVICE=C:\INSIGNIA\CDROM.SYS
LASTDRIVE=H
STACKS=9,256
```

AUTOEXEC.BAT

This is a file that MS-DOS runs immediately after carrying out the commands in CONFIG.SYS. It can contain any commands you want to be executed whenever you start up the system. You can also include statements in this file that tell MS-DOS where to look for specific commands.

The following listing shows the default AUTOEXEC.BAT file:

```
@ECHO OFF
C:\WINDOWS\SMARTDRV.EXE 1024,128
PATH C:\WINDOWS;C:\INSIGNIA;C:\DOS;C:\INSIGNIA\SOFTNODE\
NETBATCH;C:\NOVELL;C:\
SET TEMP=C:\DOS
C:\INSIGNIA\CKCONFIG
C:\INSIGNIA\FSADRIVE E: G: H:
C:\INSIGNIA\MOUSE.COM
MODE COM1:9600,N,8,1
PROMPT $P$G
VER
ECHO Type WIN and press RETURN to start Windows.
```

Editing configuration files

MS-DOS includes a simple screen editor which you can use to create, edit, and print plain text files. You can choose editing commands from menus, and edit text using the mouse. The MS-DOS editor is particularly useful for editing MS-DOS batch programs and files, such as `AUTOEXEC.BAT` and `CONFIG.SYS`.

To use the mouse with the MS-DOS editor

➤ Choose **Emulate PC Mouse** from the **Setup** menu.

To restore the normal Macintosh mouse at any time type ⌘M.

To run the MS-DOS editor

➤ Type the following command at the `C:\>` prompt:

`EDIT` *`filename`* ↵

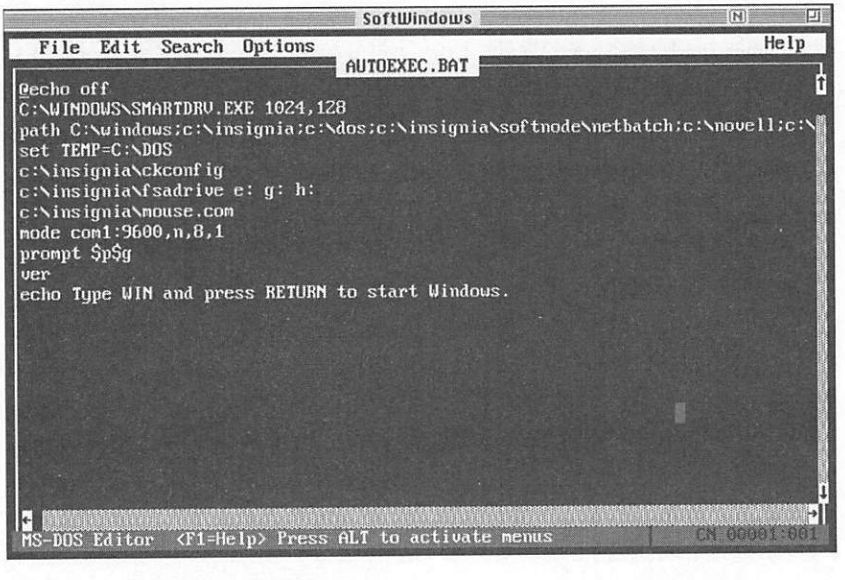
where *`filename`* is the name of the file you want to edit.

Alternatively, type `EDIT` ↵ with no filename to create a new file.

For example, to edit the `AUTOEXEC.BAT` configuration file type:

`EDIT AUTOEXEC.BAT` ↵

The file will then be displayed in the MS-DOS editor window, as shown below.



To edit the file

- Position the cursor using the cursor keys, or by moving the mouse and clicking.
- Type to insert text at the cursor.
- Drag to select text. Whatever you type will then replace the selected text, or you can delete it by pressing delete.
- Use the **Cut**, **Copy**, **Paste**, and **Clear** commands from the MS-DOS editor's **Edit** menu in exactly the same way as you would use the equivalent commands in Macintosh applications.

You will be prompted to save the file before exiting if you have made any changes to it.

- Click **Yes**, or press ↵, to save the changes and exit from the MS-DOS editor.

To use the MS-DOS editor on a black and white Macintosh

For best results when using a monochrome Macintosh screen you can reconfigure the MS-DOS editor so that the cursor and selected items in the menus are more visible.

- Run the MS-DOS editor.
- Choose **Display** from the editor's **Options** menu.
- Use the tab and arrow keys to select a foreground color of white and a background color of black.
- Press ↵ to use the options you have specified.

Networking with SoftWindows

SoftWindows includes Insignia's SoftNode network drivers to enable you to share files with other PCs on the network, or run multi-user programs. To use the SoftWindows networking features you first need to install the appropriate networking software for the network you are using.

Novell NetWare

SoftWindows comes complete with Novell NetWare 3.1.X client software, which you can use to connect to NetWare file servers from a Macintosh on Ethernet or Token Ring.

SoftWindows also includes gateway control panels, to allow you to connect to an Ethernet or Token Ring NetWare network if your Macintosh is on LocalTalk.

For details of setting up and using Novell NetWare over each type of network refer to *Using Novell NetWare*, page 141.

Microsoft LAN Manager

SoftWindows also includes the LAN Manager version 2.2 client software, preinstalled. You can use this to connect to LAN Manager, Windows for Workgroups, and Windows NT advanced servers over Ethernet or Token Ring networks.

For details of setting up and using LAN Manager refer to *Using Microsoft LAN Manager*, page 151.

Other networking software

SoftWindows is also compatible with many other network packages, and you install these just as you would on a PC.

This chapter gives more information about the SoftNode network interface, and summarizes the other network packages you can use with SoftWindows.

Using networking packages

The SoftNode network interface included in SoftWindows uses the Open Datalink Interface (ODI) standard developed by Novell, and most ODI networking software can be installed and used with SoftWindows.

Some networking software uses the Microsoft standard, called NDIS. SoftWindows includes an ODI to NDIS interface utility, `ODINSUP`, which allows NDIS networking software to be used with SoftWindows.

Whichever of the standards you are using, SoftWindows acts as an independent node on the network, and you may need to inform your servers of its presence.

In each case you install the network product, just as you would on a PC, following the manufacturer's instructions.

If you have problems connecting SoftWindows to a server it is recommended that you try a real PC from the same network position, to verify that the problem does not lie with the network.

The following table gives details of some of the most popular networking packages that can be used with SoftWindows:

Package	*Driver*	*Configuration files*	*Batch files*
Banyan VINES 5.5.2 or 5.5.4	NDIS	BANYAN	BNV.BAT, BNVT.BAT
DEC PATHWORKS 4.0	NDIS	PW4	PW4.BAT
DEC PATHWORKS 5.0	NDIS/ODI		
LAN Manager 2.2	NDIS	LANMAN/NETBEUI	LANMAN.BAT, LANMANT.BAT
		LANMAN/TCPIP	LMTCP.BAT, LMTCPT.BAT
LAN Workplace for DOS 4.0.1	ODI	LWP/401	LWP401.BAT, LWP401T.BAT
LAN Workplace for DOS 4.1	ODI	LWP/41	LWP41.BAT, LWP41T.BAT
LANtastic for NetWare	ODI		
Novell NetWare 4.0	ODI		
PC NFS v4	NDIS		
PC NFS v5	NDIS/ODI		
PC/TCP 2.3 or 3.x	NDIS	PCTCP	
Windows for Workgroups 3.1	NDIS	WFW	WFW.BAT, WFWT.BAT
Windows for Workgroups 3.11	NDIS	WFW311	WFW311.BAT

Configuration files

SoftWindows includes sample configuration files for many of these networking products, to simplify the process of installing them.

Where available, they are provided in the INSIGNIA\SOFTNODE directory, in the subdirectory or subdirectories specified in the *Configuration files* column in the above table. Files that differ between Ethernet and Token Ring are provided in further subdirectories ETHERNET and TOKEN.

Batch files

To copy the configuration files to their correct locations you can run the appropriate batch file, provided in the directory `C:\INSIGNIA\SOFTNODE\NETBATCH`, and the names of the batch files are given in the *Batch files* column of the table on the previous page.

Where appropriate the batch files are provided in two versions; for Ethernet and Token Ring. In each case the Token Ring version has an additional `T` at the end of the filename.

The batch file performs the following operations:

- Makes a backup of the existing `CONFIG.SYS`, `AUTOEXEC.BAT`, and `NET.CFG` files as `CONFIG.001`, `AUTOEXEC.001`, and `NET.001` to the `C:\BACKUP` directory. The extension number is incremented if an earlier backup already exists.
- Copies the appropriate `CONFIG.SYS`, `AUTOEXEC.BAT`, and `NET.CFG` files for the specified networking package.
- Copies any other configuration files required by the networking package. For example, some packages have their own configuration file such as `PROTOCOL.INI`.

Some batch files contain path names that may need to be altered before you run them.

Restoring the default configuration files

You can restore the default `AUTOEXEC.BAT`, `CONFIG.SYS`, and `NET.CFG` files after installing any networking software by giving the command:

`UNDOLAN.BAT` ↵

As with the other batch files a backup of the existing configuration files is made to the `C:\BACKUP` directory.

Installing and running networking packages

The procedure for installing and running networking software depends on the driver used by the package, as shown in the *Driver* column in the table on the previous page.

The following sections in this chapter give general guidelines for each type of driver.

For specific information about installing and running each of the networking packages in the above table, and any other packages subsequently supported by SoftWindows, please refer to the appropriate technical support document, available from any of the following locations:

- In the **Documentation** folder on the SoftWindows installation CD-ROM.
- From Insignia's fax response service, available by dialing:

In the USA: 800-876-3872
Outside the USA: (1) (415) 694-7655

- From Insignia's World Wide Web page:

`www.insignia.com`

Using ODI networking software

The ODI networking standard is implemented by an ODI driver, which receives a simple set of commands, such as *register protocol* or *transmit packet*, and converts them into commands for a particular network board. In general each model of network board will have its own ODI driver. The ODI driver therefore acts as the interface between Novell NetWare, or any other ODI compliant application, and a specific network board.

Configuring the ODI system

The ODI system is configured through a single file, `NET.CFG`. The file is divided up into sections, each of which provides parameters to configure a different part of the ODI system. Each section of the file begins with a section heading, at the start of the line, followed by a series of configuration options, under the section heading and indented with a tab.

The following example shows a simple NET.CFG file:

```
Link Support
   Buffers 8 1500
   MemPool 4096

Link Driver ETHERSPC
   Frame ETHERNET_II
   Protocol IPX 8137 ETHERNET_II
```

The NET.CFG file only contains configuration options which differ from the default settings. If the default settings are acceptable there is no need to include the option in the NET.CFG file.

The main sections of the NET.CFG file are described below.

Link Support

The Link Support section in the NET.CFG file configures the link support layer (LSL). This section of the file may be omitted, in which case the link support layer uses default settings.

The following configuration options may be specified for the link support layer:

Buffers

Syntax:

Buffers *number* [*size*]

The Buffers option configures the number and size in bytes of the receive buffers that will be maintained by the Link Support Layer. The default is:

Buffers 0 1130

Mempool

Syntax:

MemPool *number*[K]

The `MEMPOOL` option configures the size of memory pool that the Link Support Layer will maintain. The size is in bytes unless followed by a K, in which case it is in Kbytes. The default is:

```
MemPool 0
```

Link Driver

The `Link Driver` section is the most important part of the `NET.CFG` file for configuring SoftWindows. The options set in this section govern the interface between the driver and the rest of the system, the protocols registered with the driver, and the format of packets transmitted and received by the driver. There are also numerous other configuration options associated with the network card, but most of these are not relevant to SoftWindows.

The following options are most important for SoftWindows.

Protocol

Syntax:

`Protocol` *`name protocolID frame-type`*

The `Protocol` line dictates which frame type is used for receiving packets.

Frame

Syntax:

`Frame` *`frame-type`*

The `Frame` line dictates the frame type used for transmitting packets. Omitting the `Frame` line is equivalent to specifying `Frame ETHERNET_802.3`.

If there is more than one `Frame` line, one of them should match the *`frame-type`* in the `Protocol` line, and this frame type will be used for transmitting and receiving.

Example

A sample `Link Driver` section is as follows:

```
Link Driver ETHERSPC
   Frame ETHERNET_802.3
   Frame ETHERNET_802.2
   Frame ETHERNET_II
   Frame ETHERNET_SNAP
   Protocol IPX 8137 ETHERNET_II
```

This will transmit and receive using the `ETHERNET_II` frame type.

Starting SoftNode

The ODI system is started using the following sequence of steps:

➤ Start the Link Support Layer with the command:

`LSL` ↵

➤ Start the Insignia ODI driver for the relevant hardware in use:

Give this command	*For this situation*
`ETHERSPC`	For Ethernet
`TOKENSPC`	For Token Ring
`ATALKSPC`	For LocalTalk

The `LSL` and `ETHERSPC` commands both look for the `NET.CFG` file in the current directory. It is therefore recommended that you run the networking commands from the directory containing the `NET.CFG` file, to ensure that they are all referencing the same file; for example, from the `NOVELL` directory.

Stopping SoftNode

The ODI system is halted by unloading the ODI system in reverse order. For example, on Ethernet type:

`ETHERSPC U` ↵
`LSL U` ↵

Troubleshooting ODI

Link Support Layer

There should not be any problems loading the Link Support Layer. If an error does occur then the most likely cause is an incorrect entry in the Link Support section of the `NET.CFG` file.

The ODI driver

If you have problems loading the ODI driver refer to the section for the particular networking software you are using.

Using NDIS networking software

ODI is not the only network driver standard commonly adopted by manufacturers. Another standard called NDIS is supported by a number of manufacturers including Microsoft.

ODI and NDIS are completely incompatible because they have different sets of features, and a totally different driver interface. Fortunately Novell has produced a converter program, `ODINSUP`, which provides an interface between NDIS applications and the ODI system. This utility allows you to run an NDIS networking package, such as Microsoft LAN Manager, using the ODI driver in SoftWindows.

`ODINSUP` registers itself with the Link Support Layer as an ODI protocol stack, while appearing to NDIS applications as an NDIS driver.

Configuring NDIS

Because `ODINSUP` is loaded before any of the NDIS software it does not know which frame types will be used by NDIS applications. It is therefore necessary to enable all generally used frame types in the `NET.CFG` file.

Example

The following example shows the NET.CFG file for LAN Manager on Ethernet, using the Netbeui protocol:

```
Link Support
   Buffers 10 1518

Protocol ODINSUP
   Bind ETHERSPC
   Buffered

Link Driver ETHERSPC
   Frame ETHERNET_802.2
   Frame ETHERNET_802.3
   Frame ETHERNET_II
   Frame ETHERNET_SNAP
   Protocol NETBIOS F0 ETHERNET_802.2
```

Starting NDIS

To start the NDIS system proceed as follows:

➤ First start the ODI system in the usual way, by typing:

```
LSL ↵
ETHERSPC ↵
```

➤ Start the ODI Support Layer by typing:

```
ODINSUP ↵
```

MacTCP, Novell TCP/IP, and Winsock

MacTCP and Novell TCP/IP allow you to run multiple TCP/IP-compatible applications on your Macintosh at the same time. Neither of these products are provided with SoftWindows 2 and should be purchased separately. They should be configured as detailed in the documentation provided.

If you have MacTCP or Novell TCP/IP installed, you can run other TCP/IP compatible applications on the Macintosh at the same time as running SoftWindows over a WINSOCK-compatible network.

To do this, replace the `WINSOCK.DLL` provided in the `C:\WINDOWS` directory with the file provided with SoftWindows in the `C:\INSIGNIA` directory.

Using Novell NetWare

This chapter gives detailed instructions for setting up and running Novell NetWare over Ethernet and Token Ring networks.

It also explains how to use a gateway to enable you to access a NetWare network from a Macintosh on LocalTalk.

If you are already running IPX software on your Macintosh you may be able to use the MacIPX control panel to run NetWare concurrently with this; refer to *Using MacIPX*, page 148.

For information about upgrading to Novell NetWare 4.0 refer to *Using networking packages*, page 130.

Setting up Novell NetWare

Novell NetWare 3.1.X client software is supplied already installed with SoftWindows. It is an ODI compliant interface which uses a protocol called IPX.

By default, NetWare is configured for an Ethernet network with frame type 802.3. If the NetWare server is running over a different network or frame type you must edit the ODI configuration file, `NET.CFG`, to use the required frame type as described in this chapter.

If your Macintosh is not connected to the Ethernet or Token Ring network containing the NetWare file server, you can use another Macintosh on the Ethernet or Token Ring network to act as a link between the LocalTalk and the NetWare network. You do this by installing the **Ethernet** or **Token Ring Gateway** control panel, provided with SoftWindows, on the other Macintosh. For more information refer to *Using a LocalTalk gateway*, page 144.

Configuring NetWare

The NetWare client configuration file, `NET.CFG`, specifies the frame type and protocol for your Novell network.

It is supplied set up for both Ethernet and Token Ring, with the default frame types set to ETHERNET_802.3 and TOKEN-RING_802.2, respectively.

If your Novell network has different characteristics you will need to edit the file to select the appropriate options.

To change the options, comment out the current setting by inserting a semicolon in front of the line, and remove the semicolons from the lines you require.

Ethernet and Token Ring frame types

The alternative possible frame types are shown in the following table:

Frame type	*Description*
ETHERNET_802.3	The default frame type, used by the majority of Novell NetWare 3 networks.
ETHERNET_II	Used by NetWare 286 after running `ECONFIG`.
ETHERNET_SNAP	NetWare packet type 4.
ETHERNET_802.2	NetWare packet type 3, the default frame type used by NetWare 4.
TOKEN-RING	The Token Ring default type, also called TOKEN-RING_802.2.
TOKEN-RING_SNAP	Also used by Token Ring networks.

If you do not know the correct frame type, you can try accessing a NetWare file server from SoftNode running on a Macintosh on the Ethernet or Token Ring network, using the appropriate Ethernet or Token Ring frame types in turn.

Running Novell NetWare

To run NetWare you need to type the following sequence of commands at the C:\> prompt:

Command	*What it does*
LSL	Loads the Link Support Layer for the ODI system.
ETHERSPC, TOKENSPC, or ATALKSPC	Loads the ODI driver for the appropriate network.
ISIPXODI	Loads the IPX protocol stack.
NETX	Loads the NetWare shell.
I:	Changes the MS-DOS prompt to drive I, the default NetWare drive.

Batch files ETHER.BAT, TOKEN.BAT, or ATALK.BAT are provided in the C:\INSIGNIA\SOFTNODE\NETBATCH directory which will execute the above steps with a single command.

Once you have verified that the network is working correctly, you can include the appropriate sequence of commands in your AUTOEXEC.BAT file so that the network is available each time you run SoftWindows; refer to *Editing configuration files*, page 127.

Listing the servers

Once you have connected to the server you can list the servers on the network by typing the following command at the file server prompt:

SLIST ↵

A list of available servers will be displayed.

Selecting a server

If the network has two or more servers you can select one by modifying the `NETX` command in the batch file like this:

`NETX PS=`*`servername`* ↵

where *`servername`* is the name of the server you want to use. For information about editing files under MS-DOS refer to *Editing configuration files*, page 127.

Changing the LASTDRIVE setting

The login drive for a NetWare file server is always one letter after the setting of `LASTDRIVE` in MS-DOS. `LASTDRIVE` is specified in `C:\CONFIG.SYS`. The default `LASTDRIVE` setting is `H:`, giving a default NetWare login drive of `I:`.

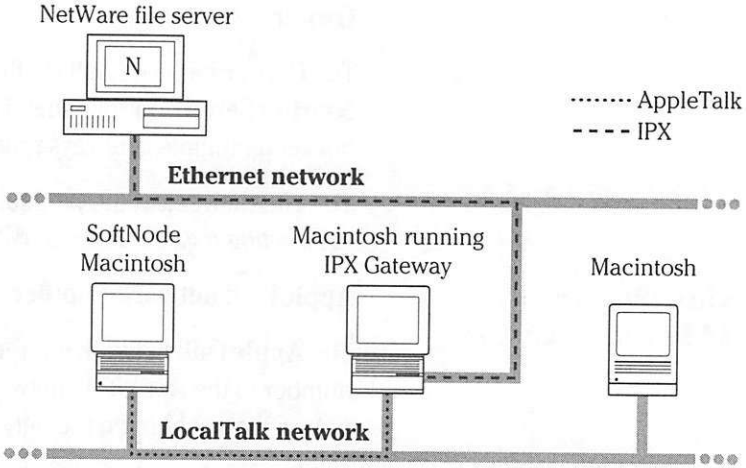
If your PC application expects a specific login drive letter edit `CONFIG.SYS` to set `LASTDRIVE` to one letter before the required login drive letter.

Do not set `LASTDRIVE` to `Z:` as this will leave no free drive letter for the login drive.

Using a LocalTalk gateway

You can use Novell NetWare even if your Macintosh is on a LocalTalk network, and is not connected to the Ethernet or Token Ring network containing the NetWare server. To do this you use another Macintosh on the network containing the server as a gateway from the LocalTalk network.

To set up the gateway you install the **Ethernet** or **Token Ring Gateway** control panel on the other Macintosh. Once installed, the gateway will run invisibly in the background and can act as a gateway for any number of Macintosh computers on the LocalTalk network.

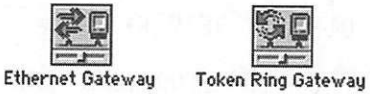


Installing the gateway

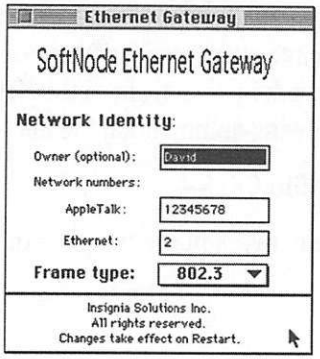
Run the installer, choose **Custom Install**, and select the **Ethernet Gateway** or **Token Ring Gateway** option as appropriate. You should also select the **Gateway Finder Utility** option; refer to *Finding accessible gateways* below.

Configuring a gateway

Choose **Control Panels** from the ⍟ menu and open the Gateway control panel by double-clicking its icon.



The **Ethernet Gateway** or **Token Ring Gateway** control panel is displayed, as appropriate.



Owner

The **Owner** name defaults to the **Owner Name** in the Macintosh **Sharing Setup** control panel. This name is used to distinguish between multiple gateways running on the same network.

You can then select the particular gateway you want to use; refer to *Selecting a gateway for SoftWindows*, page 147.

AppleTalk network number

The **AppleTalk** network number assigns a NetWare network number to the AppleTalk network. Provided the default value is not used elsewhere on the network, you can leave the default value.

Ethernet/Token Ring network number

The **Ethernet** or **Token Ring** network number must be set to the NetWare network number of the network you are attached to.

To find the network number type the following command at the NetWare file server console:

```
DISPLAY NETWORKS ↵
```

This will list all the networks accessible to the NetWare file server, with their network numbers, including the LocalTalk network if a SoftNode Gateway is running.

Alternatively, you can display the network number from a Macintosh running SoftNode on the Ethernet or Token Ring network by logging in to the NetWare file server and typing the following command at the file server prompt:

```
COMCHECK ↵
```

The network number will be displayed.

Frame type

The **Frame type** defaults to the most widely-used option, **802.3** for Ethernet and **802.2** for Token Ring. If you are not sure what the correct value should be refer to *Ethernet and Token Ring frame types*, page 142.

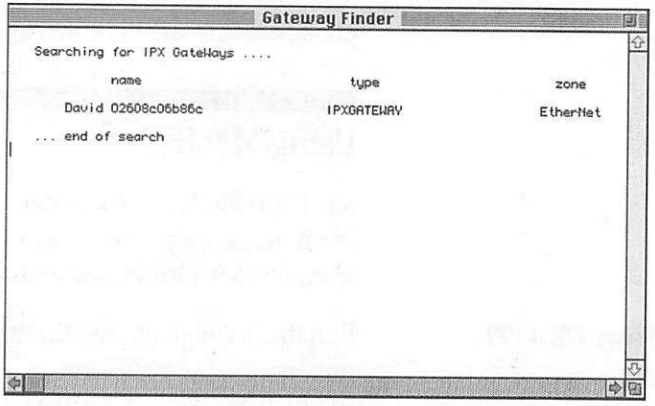
Restart the Macintosh to run the gateway program.

Finding gateways

Double-click the **Gateway Finder** icon.

Gateway Finder

The **Gateway Finder** window shows up to 20 gateways for each zone. Each entry on the list shows the gateway name, the gateway type, and the zone it is in.



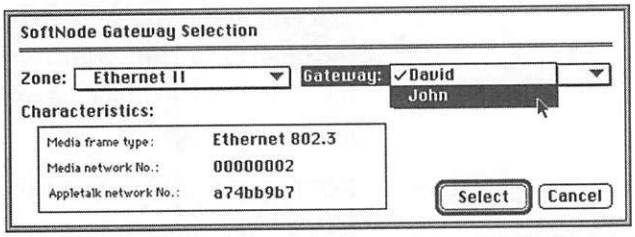
If the Gateway Finder does not show a gateway that you know to be active, check the network connections of both your Macintosh and the Macintosh running the gateway.

Selecting a gateway for SoftWindows

If your network is part of an internet, with more than one NetWare Server and SoftNode Gateway, you will need to select a gateway on the same network as the server you want to use. To do this you need to know the gateway name.

Choose **SoftNode Gateway...** from the SoftWindows **Setup** menu.

This dialog box shows the gateway that SoftNode has located:



Use the **Zone** and **Gateway** pop-up menus to choose a gateway. The **Characteristics** box shows network information which may be useful to system administrators.

If no gateways have been located the entries in the **Characteristics** box will show **Unknown** and the **Gateway** list will be blank.

Click **Select** to use the gateway you have selected.

Using MacIPX

MacIPX is an IPX protocol stack for the Macintosh that allows you to run IPX software on the Macintosh concurrently with IPX software in SoftWindows, such as Novell NetWare.

Installing MacIPX

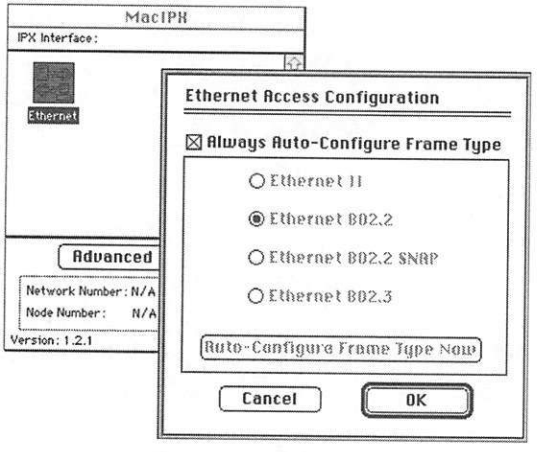
Run the installer, choose **Custom Install**, and select the **MacIPX** option.

Configuring MacIPX

Choose **Control Panels** from the menu and open the MacIPX control panel by double-clicking its icon.

MacIPX

The MacIPX control panel will be displayed:



Select the Ethernet Frame Type specified in the `NET.CFG` file; refer to *Ethernet and Token Ring frame types*, page 142.

Using Microsoft LAN Manager

This chapter gives detailed instructions for setting up and running Microsoft LAN Manager over an Ethernet network.

LAN Manager is the standard Microsoft network operating system. It is an NDIS package, so requires ODINSUP. It can use either the NETBEUI or TCP/IP protocols.

SoftWindows is supplied with the LAN Manager version 2.2 client software already installed in the `C:\LMCLIENT` directory.

Installing LAN Manager

To install LAN Manager proceed as follows.

Make the LAN manager directory the current directory by typing:

`CD LMCLIENT` ↵

Run the setup utility by typing:

`LMSETUP` ↵

Set up the workstation configuration

Choose **Workstation Settings...** from the **Configuration** menu, and follow the instructions either accepting the defaults, or making changes where required.

Set up the network drivers

Choose **Network Drivers...** from the **Configuration** menu, and select **Add New Config**. Then select either **Insignia Ethernet ODI Adapter** or **Insignia Token Ring ODI Adapter**, as appropriate for your network.

You will then be asked to select the network protocols. If you select **MS TCP/IP** you will need to complete a further form.

Save the configuration

Finally you can review the installed configurations you have specified. Choose **OK** to confirm they are correct, and choose **Save** to save the configuration. Then choose **Exit Setup** from the **LAN Manager** menu to exit from the setup program.

Using a batch file

You can set up LAN Manager automatically, after running `LMSETUP`, by running one of the following batch files:

Network	*NETBEUI*	*TCP/IP*
Ethernet	`LANMAN.BAT`	`LMTCP.BAT`
Token Ring	`LANMANT.BAT`	`LMTCPT.BAT`

Edit the PROTOCOL.INI file

Edit the `PROTOCOL.INI` in the `LMCLIENT` directory by typing:

```
EDIT PROTOCOL.INI ↵
```

Change the `BINDINGS` line to read:

```
BINDINGS="ETHERSPC"
```

or:

```
BINDINGS="TOKENSPC"
```

as appropriate. Then save the modified file.

Reset SoftWindows

Reset SoftWindows by choosing **Reset SoftWindows** from the **Setup** menu.

Editing the configuration files manually

The batch files make changes to your configuration files. Alternatively, you can make these changes manually if you prefer as described in the following sections:

Edit the AUTOEXEC.BAT file

Edit the AUTOEXEC.BAT file by typing:

```
CD.. ↵
EDIT AUTOEXEC.BAT ↵
```

and add the following lines to the end of the file:

```
CD NOVELL
LSL
ETHERSPC
ODINSUP
CD ..
```

Then save the file.

Edit the CONFIG.SYS file

Edit the CONFIG.SYS file by typing:

```
EDIT CONFIG.SYS ↵
```

Add the following, on a single line:

```
DEVICE=C:\LMCLIENT\DRIVERS\PROTMAN\PROTMAN.DOS
/I:C:\LMCLIENT
```

Remove the line:

```
C:\INSIGNIA\HOST.SYS
```

Then save the file.

Copy the NET.CFG file

Copy the appropriate NET.CFG file for the protocol and network you are using, by typing; on a single line:

```
COPY
C:\INSIGNIA\SOFTNODE\LANMAN\protocol\network\
NET.CFG C:\NOVELL ↵
```

Where *protocol* is NETBEUI or TCPIP and *network* is ETHERNET or TOKEN, as appropriate.

Confirm you want to overwrite the original NET.CFG file by typing Y ↵.

Running LAN Manager

To run LAN Manager type:

```
NET USE ↵
```

Disabling LAN Manager

To disable LAN Manager proceed as follows:

Run LMSETUP, and choose **Network Drivers...** from the **Configuration** menu. Then choose the **Remove Configuration** option.

Save the settings and exit from LMSETUP.

Run the batch file UNDOLAN, to restore the original AUTOEXEC.BAT and CONFIG.SYS files.

Then restart SoftWindows to use the new settings.

Scripting SoftWindows

SoftWindows includes support for AppleScript, to allow experienced programmers to write scripts that run SoftWindows, execute commands, zoom the SoftWindows MS-DOS window, read information from the screen, or quit from SoftWindows.

To use AppleScript you need to install Apple's AppleScript software and the Script Editor.

This chapter provides several simple examples of using AppleScript with SoftWindows, and gives a full description of the four different suites of AppleScript commands supported in SoftWindows.

For full information about using the AppleScript language and Script Editor refer to the documentation provided with AppleScript.

Using scripting

This section illustrates how you can use scripting by giving some simple scripting examples.

Running SoftWindows

The following script runs SoftWindows:

```
tell application "SoftWindows™"
   run
end tell
```

Executing a command in the MS-DOS window

The following script executes the MS-DOS `DIR` command:

```
tell application "SoftWindows™"
   write "DIR" & return
end tell
```

Alternatively, you can include a `return` in the string by writing:

```
write "DIR\R"
```

Reading information from the MS-DOS window

The following example copies line 22 of the MS-DOS window into the clipboard. It uses `activate` to bring the window to the front.

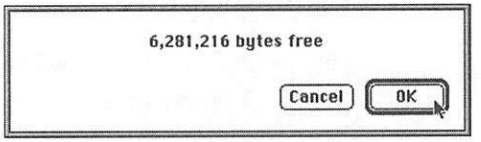
```
tell application "SoftWindows™"
   activate
   write "DIR" & return
   set bounds of selection to {0,22,44,23}
   copy
end tell
```

The numbers in the `selection` list specify an area of the SoftWindows window in the format:

{left, top, right, bottom}

where *left* and *right* are the horizontal start and end in characters, and *top* and *bottom* are the vertical start and end in lines.

The following example gives the command `DIR` to SoftWindows. It then reads line 22 of the MS-DOS window, to get the hard disk space available, and displays it in a dialog box:



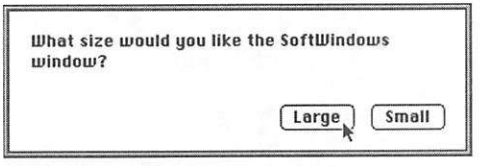
Note that the `repeat` section of the script keeps checking the result until it has stopped changing, to ensure that the `DIR` command has completed. It does this using the two variables `TheResult` and `OldResult`.

```
tell application "SoftWindows™"
activate
   write "DIR" & return
   set bounds of selection to {0, 22, 44, 23}
   set OldResult to ""
   repeat
     set TheResult to contents of selection
```

```
    if TheResult = OldResult then exit repeat
    set OldResult to TheResult
  end repeat
  display dialog OldResult
end tell
```

Zooming the SoftWindows MS-DOS window

The following script displays a dialog box, and then zooms the SoftWindows window:




```
display dialog "What size would you like the
SoftWindows window?" buttons {"Large",
"Small"}

if button returned of result = "Large" then
  set DoZoom to true
else
  set DoZoom to false
end if

tell application "SoftWindows™"
  set zoomed of window 1 to DoZoom
end tell
```

Quitting from SoftWindows

The following example quits from SoftWindows:

```
tell application "SoftWindows™"
  quit
end tell
```

Scripting reference

The following sections give reference information about the SoftWindows scripting commands.

Required suite

These must be supported by all applications which support high level events. They are:

quit

Quits SoftWindows.

For example:

```
tell application "SoftWindows™"
   quit
end tell
```

run

Runs SoftWindows.

For example:

```
tell application "SoftWindows™"
   run
end tell
```

Core suite

SoftWindows does not support the entire AppleScript Core Suite because many of the events in the suite have no relevance to SoftWindows.

get

Gets the data for an object.

The following example will return `true` or `false` indicating whether the SoftWindows main window is full size or 3/4 sized respectively:

```
get zoomed of window 1
```

The window number is ignored, and is only required for consistency with other scriptable applications.

set

Sets the data for an object.

The following example makes the SoftWindows window full-sized.

```
set zoomed of window 1 to true
```

The errors returned by the above commands depend on the object being manipulated.

data size

Returns the size of an object in bytes.

For example:

```
data size selection
```

application

The SoftWindows application itself.

The `application` has the following properties:

Property	*Description*

`clipboard`	The clipboard for the application. Returns a list containing the data in the clipboard. The clipboard can contain text or PICT data. To specify a particular type write:
	`get clipboard as text`
	or
	`get clipboard as picture`

`frontmost`	Returns `true` if SoftWindows is in the foreground, or `false` otherwise.
`selection`	The selection visible to the user.

Property	*Description*
`name`	Returns the name displayed in the MS-DOS window title bar. For example, a demo version would return: `SoftWindows - For Demonstration Purposes Only.`
`version`	Returns the SoftWindows major version number. For SoftWindows 2.x this will always be 2.

window

The SoftWindows main window.

The `window` can have the following properties:

Property	*Type*	*Description*
`closeable`	Boolean, read-only	Does the SoftWindows window have a close box? Always `true`.
`titled`	Boolean, read-only	Does the SoftWindows window have a title bar? Always `true`.
`resizeable`	Boolean, read-only	Is the SoftWindows window resizable? Always `true`.
`position`	QuickDraw Point, read/write	The location of the top left corner of the SoftWindows window.
`zoomable`	Boolean, read-only	Is the SoftWindows window zoomable? Always `true`.

Property	*Type*	*Description*
`zoomed`	Boolean, read/write	Is the SoftWindows window currently zoomed?
`contents`	Text, read-only	The textual contents of the SoftWindows window. This contains an extra ↵ at the end of each line to maintain the formatting with the script editor results window.

selection

The SoftWindows main window selection.

The `selection` can have the following properties:

Property	*Type*	*Description*
`bounds`	QuickDraw rectangle, read/write	Bounds of the current SoftWindows selection rectangle.
`contents`	Text, read-only	The contents of the SoftWindows selection rectangle.

Miscellaneous suite

This suite consists of standard Apple Events which do not belong to any other suite.

copy

Copy the selection to the clipboard.

For example:

```
tell application "SoftWindows™"
   copy
end tell
```

paste

Paste the selection from the clipboard.

For example:

```
tell application "SoftWindows™"
   paste
end tell
```

SoftWindows suite

This suite consists of custom events specific to SoftWindows

write

Insert a text string into the keyboard buffer as if it were typed in at the keyboard. Only normal ascii characters can be entered in this way. The key event (described below) is provided to enter function keys, modifier keys and so on.

The following example gives a `DIR` command:

```
write "DIR\R"
```

Note that the `\R` produces a ↵.

key

SoftWindows key.

This command has no properties.

Its syntax is:

`set key` *`named-key-form`* `to` *`keystate`*

The valid *`keystate`* values are as follows:

Keystate	*Description*
`press`	The key behaves as if typed once on the keyboard.
`down`	The key behaves as if held down on the keyboard. If key is repeatable it will start auto-repeating on the keyboard.

Keystate	*Description*
`up`	The key behaves as if released. If the key was auto-repeating because it was in the down state for the required time it should stop.

Note that there is no way to guarantee the number of times that a character is repeated while the key is in the down state because this depends on how long it is held down.

The alternative values of *`named-key-form`* are as follows:

Value	*Value*	*Value*	*Value*
0 to 9	Arrow Right	F12	Print Scrn
A to Z	Arrow Up	Home	Return
'	Caps Lock	Insert	Scroll Lock
,	Command	Num *	Shift
-	Command, right	Num +	Shift, right
.	Ctrl	Num -	Space
/	Ctrl, right	Num /	Tab
;	Del	Num 0 to Num 9	[
=	Delete	Num =	\
Alt	End	Num Lock	]
Alt Gr	Esc	Page Down	`
Arrow Down	F1 to F9	Page Up	§
Arrow Left	F10	Pause	

The following example types a ↵:

```
tell application "SoftWindows"
   set key "Return" to press
end tell
```

Note that you can use the `key` command to perform actions in Windows.

Troubleshooting

This chapter gives suggested solutions to problems that you may encounter when running PC applications on your Macintosh with SoftWindows.

It also includes details of the SoftWindows and MS-DOS error messages, with explanations and suggested solutions.

Common problems

The following sections give solutions to the most commonly-encountered problems when using SoftWindows.

Using floppy disks

How do I eject a floppy disk?

Choose the appropriate drive from the **Eject** menu.

Alternatively, press ⌘ Shift 1, ⌘ Shift 2, or ⌘ Shift 0 to eject a disk from the internal, second internal, or external drive, respectively.

How do I format a disk?

Use the MS-DOS FORMAT command; refer to *FORMAT*, page 122.

How do I read 5.25-inch MS-DOS disks?

Refer to *Installing from 5.25-inch PC disks*, page 119.

Using hard disks

How do I create a new hard disk?

Use the Customize option of the SoftWindows installer. Alternatively, use the **PC Hard Disks...** command on the **Setup** menu; refer to *Creating new hard disk files*, page 63.

How do I make a hard disk file larger?

Use the Hard Disk Expander utility; refer to *To increase the size of a hard disk file*, page 62.

I get a Windows error message, after expanding a D: hard disk, saying that the swap file cannot be found

Recreate the swap file using the Virtual Memory dialog box in the **386 Drivers** Windows control panel.

Can I use hard disk files from other versions of SoftWindows and SoftPC?

Refer to *Upgrading an existing hard disk file*, page 17.

Using CD-ROM

How do I set up a CD-ROM drive?

Use the USECD batch file supplied with SoftWindows; refer to *Setting up CD-ROM drives*, page 67.

How do I read an MS-DOS CD-ROM?

Insert the CD-ROM, and then access it as drive F:.

How do I eject a CD-ROM?

Choose the CD-ROM drive from the **Eject** menu.

Using memory

How do I select memory for PC applications?

Use the **PC Memory...** command on the **Setup** menu; refer to *PC Memory... (Setup menu)*, page 93.

Using the mouse

The mouse pointer has disappeared

While the mouse is selected for use by MS-DOS applications it is not available to the Macintosh. To restore it type ⌘M.

How do I get the right mouse button for PC applications?

Type keypad = or ⌘R (or the enter key on PowerBooks).

Using keyboards

How do I get PC keys on the Macintosh keyboard?

Refer to *Using the keyboard and mouse*, page 39.

How do I set up a foreign keyboard in MS-DOS?

Use the MS-DOS KEYB command; refer to *International usage*, page 75.

How do I set up a foreign keyboard in Windows?

Use the Windows **International** control panel; refer to *To use an international keyboard for Windows*, page 76.

Using the screen

How do I change the size of the SoftWindows MS-DOS window?

Click the zoom box on the SoftWindows MS-DOS window. The screen will change between two sizes.

The SoftWindows screen becomes corrupted by my Macintosh screen saver

Make sure you are running the SmartCopy utility.

Using printers

How do I set up the COM and LPT ports?

Refer to *Using modems and other serial devices*, page 72, *PC Serial Ports... (Setup menu)*, page 99, and *PC Printer Port... (Setup menu)*, page 96.

How can I print from a PC application?

Refer to *Printing from SoftWindows*, page 51.

Printing is not working properly

Check that the correct port is selected in the PC application: `LPT1:` for a printer selected in the Macintosh Chooser, or `COM1:` or `COM2:` for a directly connected printer.

If you are using `LPT1:` check that Windows or the PC application is set to the correct printer option: PostScript or Epson LQ-2500.

Check that the **Auto-Send...** command is specified to ensure that data is being sent to the printer, or choose **Send to Printer**; refer to *To print manually*, page 52.

Using serial devices

How do I use the Macintosh serial ports with PC applications?

Refer to *Using modems and other serial devices*, page 72, and *PC Serial Ports... (Setup menu)*, page 99.

Configuring SoftWindows

Where are the SoftWindows preferences stored?

In the **SoftWindows Prefs** file; refer to *Preferences... (File menu)*, page 102.

Running PC applications

How do I install PC software with SoftWindows?

Refer to *Installing and running Windows applications*, page 47, or *Installing and running MS-DOS applications*, page 118.

How do I run Windows?

Refer to *Running Windows*, page 33.

How can I connect SoftWindows to a Novell NetWare file server?

Refer to *Connecting to a NetWare file server,* page 49.

How can I use SoftWindows in reverse video?

Set the Macintosh **Monitors** control panel to black and white, and then choose **Inverse Video** from the **PC Video** submenu on the **Setup** menu.

How do I use MS-DOS commands?

Type them at the `C:\>` prompt; refer to *Using MS-DOS*, page 115.

How can I edit MS-DOS files?

Use the MS-DOS editor, `EDIT`; refer to *Editing configuration files*, page 127. Alternatively, you can use the Windows Notepad text editor.

MS-DOS errors

These errors appear in the SoftWindows MS-DOS window.

Error	*Explanation*	*Suggestion*
`Invalid drive specification`	If you are trying to access drive `D:`, this drive is not configured. If you are trying to access a shared drive, the Insignia software needed to handle shared drives is not properly set up in your startup disk.	Refer to *PC Hard Disks... (Setup menu)*, page 90, or *Moving PC files to and from the Macintosh*, page 65.
`Not ready error reading drive A`	The drive is set to **Empty** or it has no disk in it.	Insert a disk.
`Not ready error reading drive C`	The hard disk file is corrupted (extremely rare).	Create a new startup disk using the **PC Hard Disks...** command.
`Not ready error reading drive D`	No drive `D:` is selected, drive `D:` is set to **Empty**, or the hard disk file is corrupted (extremely rare).	Select a hard disk file.
`Non System disk` (or similar message)	If you see this message when SoftWindows is starting up it usually means that there is an MS-DOS disk (which is not a startup disk) in the drive. This may be because you have been using PC Exchange to read an MS-DOS disk.	Eject the disk and restart SoftWindows.

SoftWindows shared drive errors

These errors appear in the SoftWindows MS-DOS window and relate to the use of shared drives.

Error	*Explanation*	*Suggestion*
`The ... drive is already in use`	The drive specified in a `NET USE` command is already in use.	It may be set up as a shared drive, a hard disk partition (MS-DOS assigns drive letters automatically to the second and further partitions), or a RAM drive or other device driver.
`The ... drive is not already in use`	You are trying to detach a drive which is not in use with a `NET USE /d` command.	
`The ... drive is not a network drive`	You are trying to detach a drive that is not a shared drive with a `NET USE /d` command.	It is a drive of some other type.
`Illegal drive specification`	The drive letter you are using for a shared drive is either missing or further along the alphabet than the limit set by `LASTDRIVE`.	Refer to *Moving PC files to and from the Macintosh*, page 65.
`SoftWindows couldn't find that folder`	This usually means that since the last time SoftWindows ran the shared drive folder or disk was moved or renamed.	Use the **Mac/PC Shared Folders...** command to select a new folder.
`SoftWindows couldn't read that folder`	The folder specified for a shared drive cannot be read.	Check your access privileges.
`That name is not a folder`	A shared drive has been given a document name; only folders or disks can be used as shared drives.	

SoftWindows errors

These errors are displayed in a Macintosh dialog box.

SoftWindows licensing

Error	*Explanation*	*Suggestion*
`Sorry, this demonstration version of SoftWindows has expired`	Only relevant to demos.	Buy a full copy of SoftWindows.
`Sorry - Incorrect Password`	The password is incorrect.	Retype it.
`Sorry - Incorrect type of Password`	The password is incorrect.	You should retype the password given on your Authorization Card.
`Thank you for trying this demonstration version of SoftWindows`	Only relevant to demos.	Buy a full copy of SoftWindows.
`Both the 'Name' and 'Company Name' fields must be entered`	You have omitted a field in the **Personalization** dialog.	Enter the missing field.
`Sorry - there are too many SoftWindows users. SoftWindows may quit in 2 minutes. Please save your work`	Your concurrent use license allows a maximum number of simultaneous users of SoftWindows, and this number has been exceeded.	Save your files and try again later, or ask another user to quit.
`Sorry - there are still too many SoftWindows users. SoftWindows has to quit now`	The number of users has not decreased.	Buy another copy of SoftWindows.

Error	*Explanation*	*Suggestion*
`The number of SoftWindows users is now below the limit. This copy will continue running`	Another user has finished and you can now use SoftWindows.	
`Sorry - there are too many SoftWindows users. Please try again later`	The program already has the maximum number of users allowed by your particular license.	Save your files and try again later, or ask another user to quit.
`Please enter your SoftWindows Password...`		Enter the password. The password is found on the front of the first installation disk, or the back of the installation CD-ROM jacket.

Note

If these errors occur regularly you may need to upgrade your software license to allow a larger number of users. For more information refer to *Product upgrades*, page 191.

Running SoftWindows

Error	*Explanation*	*Suggestion*
`The SoftWindows CPU has encountered an illegal instruction`	The MS-DOS program you are running has an illegal instruction in it and SoftWindows cannot process it.	Try again. If the error recurs reinstall the program. Try running the program in a slightly different way. If the error occurs consistently contact Insignia technical support.
`Internal error in SoftWindows procedure`	This is a rare, but fatal, error and there is no way to recover.	Restart SoftWindows and retry the operations that produced the error. If the error recurs contact Insignia technical support.
`SoftWindows does not support a ROM BASIC`	This message indicates that a program has tried to access ROM BASIC. SoftWindows has no ROM BASIC.	If you want to use BASIC, use the QBASIC supplied with SoftWindows.
`SoftWindows is in a continuous reset state`	The CPU is being continuously reset. A PC/AT would lock up in this state, but SoftWindows will detect it. It has been caused by the application you are running.	If the problem persists, contact Insignia technical support.
`Unknown type of video adapter currently in use`	An earlier version of SoftPC or SoftWindows was used with a video adapter not supported in SoftWindows 2.	Only SVGA is available in SoftWindows.
`SoftWindows has been damaged. Please reload the application from your original disk`	The SoftWindows program file must be reinstalled.	Refer to *Installing the SoftWindows files*, page 6.

Error	*Explanation*	*Suggestion*
`Sorry - can't modify resources. Please make sure that your SoftWindows application is writable`	The SoftWindows application is locked or on a read-only disk.	Unlock SoftWindows and try again.

SoftWindows hard disk files

Error	*Explanation*	*Suggestion*
`Can't find ...`	This message will have named a hard disk file which cannot be found.	It may have been moved or renamed.
`Document is not a SoftWindows hard disk file`	The selected hard disk file is not a valid SoftWindows hard disk file or SoftWindows will not properly recognize a hard disk file.	Make sure you do not have QuickFolder or Shield INIT in your System Folder. Maybe another application has written into the document – only SoftWindows can do this correctly.
`The hard disk document name must not be empty`	The hard disk filename in your SoftWindows settings file is blank.	Use the **PC Hard Disks...** command to assign a valid hard disk file.
`Locked or already in use:...`	The hard disk file specified is either locked, in use by another user, or mounted by AccessPC.	
`SoftWindows could not create the new hard disk document`	You probably do not have the correct access privileges on a file server, are using an anti-virus extension, or the size of the hard disk was not large enough for the MS-DOS software to be loaded.	Either change the access privileges, disable the anti-virus extension, or specify a larger disk.

Error	*Explanation*	*Suggestion*
`Please upgrade hard disk drive: …`	You are trying to use a hard disk file from version 1 of SoftWindows.	Upgrade the hard disk file; refer to *Upgrading an existing hard disk file*, page 17.
`The hard disk … was created by this version of the installer. Are you sure you wish to re-upgrade it, some settings may get lost?`	You are trying to upgrade a hard disk file that is already version 2.	There is no need to upgrade it.
`The hard disk was created by a version of the installer that has a different language. It cannot be upgraded.`	You are trying to upgrade a version 2 hard disk file with a different language.	It cannot be upgraded.

Memory

Error	*Explanation*	*Suggestion*
`The amount of LIM requested is invalid or exceeds available memory`	You have requested too much memory.	Check that you have not requested more than 32 Mbytes. If not, your request is valid but there is not enough RAM available to satisfy it. Refer to *Setting up memory*, page 68.
`Out of memory`	You are running close to the minimum amount of memory needed by SoftWindows.	Increase the application memory size; refer to *To change the application memory size*, page 68.
`SoftWindows couldn't allocate the requested number of Memory pages`	There is not enough memory available to provide the requested amount of Memory.	You can try allocating less. Refer to *Setting up memory*, page 68.

Error	*Explanation*	*Suggestion*
`SoftWindows couldn't use that drive`	SoftWindows has a memory problem in setting up the shared drive.	Refer to *Setting up memory*, page 68.
`There isn't enough space for the new Hard Disk file`	There is insufficient space on the selected Macintosh drive.	Make more space available on your hard disk or create a smaller SoftWindows hard disk file.
`Unable to create EGA font - possibly due to insufficient memory`	There is not enough memory available for SoftWindows to create the font.	Refer to *Setting up memory*, page 68.

Floppy disk drives

Error	*Explanation*	*Suggestion*
`The IBM hardware-compatible floppy disk drive is no longer attached to this machine`	The floppy disk drive that was selected for drive `A:` or drive `B:` has been removed since the last time SoftWindows ran.	Use the **PC Floppy Disks...** command to set drive `A:` or `B:` to use another PC-compatible drive or to **Empty**.

Network drives

Error	*Explanation*	*Suggestion*
`Mac files must be accessed from a folder`	Drive `E:` has been given a document name; only folders or disks are valid.	

Serial ports

Error	*Explanation*	*Suggestion*
`Both serial port emulations cannot use the same serial port`		Ensure that `COM1:` and `COM2:` are assigned to different ports.
`One of the serial port emulations is configured to use your AppleTalk port`	The port that you have requested for `COM1:` or `COM2:` on SoftWindows is already in use by AppleTalk.	Either use the Macintosh Chooser to disable AppleTalk or use the **PC Serial Ports...** command to reassign `COM1:` or `COM2:`.
`Unable to open the serial port output file`	The file that you selected for use for the serial port output may be locked, or in use by another application or network user.	

SoftNode errors

These error messages may appear in the SoftWindows MS-DOS window.

PC software error messages

Note that if an error message refers to IPX Gateway this is the same as Ethernet Gateway or Token Ring Gateway.

Error	*Explanation*	*Suggestion*
`A File Server cannot be found (netx.com)`	You have the wrong frame type set.	Correct your `net.cfg` file or gateway frame type. Refer to *Configuring the ODI system*, page 133, or *Configuring a gateway*, page 145.
`FATAL Could not find a host Ethernet/Token Ring board (etherspc/tokenspc.com)`	You are running `etherspc/tokenspc.com` when your Macintosh does not have an Ethernet/Token Ring board.	Check your Macintosh installation or use a SoftNode gateway connection to the NetWare file server.
`FATAL Board failed to initialize correctly (etherspc/tokenspc.com)`	You are running `etherspc/tokenspc.com` when your Macintosh does not have an Ethernet/Token Ring board, or there is an error with the board.	Check your Macintosh installation. Contact technical support if the error recurs; refer to *Technical support*, page 189.
`Warning Protocol already in use. Protocol=IP, Frame=xx, PID=xx (etherspc.com/tokenspc.com)`	Other software on your Macintosh is already using the TCP/IP protocol. Examples are Telnet, FTP, or Internet browsing software.	Quit from the Macintosh TCP/IP software. Alternatively, if the PC TCP/IP software is Winsock compliant, you can use the SoftWindows Winsock driver concurrently with the Macintosh TCP/IP software.
`Warning Protocol already in use. Protocol=IPX, Frame=xx, PID=xx (etherspc/tokenspc.com)`	Other software on your Macintosh is already using the IPX protocol. An example is the Ethernet Gateway using the specified frame type.	Select a different frame type in either the Gateway or SoftWindows.

Error	*Explanation*	*Suggestion*
`Cannot find AppleTalk-IPX Gateway (atalkspc.com)`	You have not installed the gateway or some network problem is preventing connection.	Use the **SoftNode Gateway...** command or AppleTalk diagnostic tools to locate the gateway. Check the **Network** control panel settings in your Macintosh and the Macintosh running the gateway. Restart both if you change the **Network** control panel settings.
`File server has no free connection slots (netx.com)`	The SoftNode gateway is configured with the wrong Ethernet or Token Ring network number.	Check that the Ethernet or Token Ring network number is set correctly in the **SoftNode Gateway** configuration panel; refer to *Configuring a gateway*, page 145.

SoftNode gateway error messages

These errors are produced by the Ethernet or Token Ring control panels.

Error	*Explanation*	*Suggestion*
`The Ethernet Gateway cannot be used as an Ethernet card could not be found`	There is no Ethernet card present or no driver for the card.	Check the **Network** control panel.
`Your Ethernet Gateway cannot be used as the IPX protocol is in use by other software`	Other software is already using IPX.	Check that no other program, such as MacIPX, is running.
`The Token Ring Gateway cannot be used as a Token Ring card could not be found`	There is no Token Ring card present or no driver for the card.	Check the **Network** control panel.

Specification

This chapter gives a full technical specification of SoftWindows.

General specification

Feature	*Specification*
Processor	80486.
Math co-processor	80487.
ROM BIOS	AT-compatible.
MS-DOS	Version 6.22.
Windows	Version 3.11.
Memory	640 Kbytes. Extended: up to 2 Gbyte.
Hard disk drives	Two drives, `C:` and `D:`.
Network drives	Multiple drives, `E:` to `Z:`.
Floppy disk drives	Two drives, `A:` and `B:`.
Video	Super Video Graphics Array (SVGA).
Display	Color on a Macintosh with at least 16 colors or grayscales; otherwise monochrome.
Sound	Windows sound support. Samples: 8 or 16 bit, mono or stereo. Sample rates: 11.025, 22.05, or 44.1 kHz.
Windows desktop	Black & white, 16 colors, or 256 colors. Size: 436 x 240 to 1280 x 1024.
Printer port	One port, `LPT1:`.

Feature	*Specification*
Printer	Epson LQ-2500, 132 columns, or PostScript printer.
Serial ports	Two ports, `COM1:` and `COM2:`.
Keyboard	101-key, AT-style keyboard supported by any Macintosh keyboard.
Mouse	Microsoft Bus Mouse compatible.
CD-ROM drives	One drive; Microsoft CD-ROM extension software included.

Networking specification

Feature	*Specification*
Novell NetWare	NetWare 2.15c, or later, including NetWare 386 and NetWare 4.0.
LAN Manager	LAN Manager 2.2.
Network drivers	ODI and NDIS.
Macintosh memory requirements	Included in SoftWindows – no additional memory required.
SoftWindows memory requirements	Approximately 80 Kbytes of RAM per client.
Hard disk space required	Included in SoftWindows – no additional disk space required.
Compatible Ethernet or Token Ring hardware	Any Ethernet or Token Ring adapter and driver conforming to the Apple standard.

Refer to the **ReadMe-SoftWindows** file for details of the supported Token Ring and Ethernet cards.

Glossary

AppleTalk
Part of the standard system software supplied with every Macintosh computer. It is a network system whose components have a set of rules (or protocols) in common for exchanging information on a network.

Application icon
In Windows, a graphic icon that represents a running application. This icon appears only after you start an application and reduce (minimize) it.

Application window
In Windows, the window containing the work area and menu bar for an application. The name of the application appears at the top of the window.

AUTOEXEC.BAT
A special batch file that is executed each time a PC boots up.

Batch file
A text file containing MS-DOS commands that can be executed to run the commands it contains as if they were typed in at the keyboard.

Boot
The PC terminology for starting up the computer.

CD-ROM
A read-only form of data storage, using standard Compact Disc media, capable of providing over 600 Mbytes of data.

CONFIG.SYS
A special MS-DOS text file that contains commands to configure the MS-DOS operating system.

Control menu box
An application running in Windows has a control menu box at the top left of the application window. This allows you to control the characteristics of the window and switch between applications.

Directory
The PC name for a folder. As on the Macintosh, it can contain files and other directories.

Ethernet

A widely used network system. The Ethernet cabling system and communications method have been standardized by the IEEE 802.3 committee and by ISO. Ethernet has a default frame type of Ethernet_802.3.

Ethernet II

One of the standards that can be used on an Ethernet cabling system. The `ECONFIG` utility configures NetWare to use this standard.

EtherTalk

Apple's data-link product that allows an AppleTalk network to be connected by Ethernet cables. It is an Apple Computer networking standard which is based on, and is compatible with, Ethernet.

Expanded memory

The LIM (Lotus, Intel, Microsoft) standard for extending the amount of memory available to PC applications beyond their original 640 Kbytes.

Extended memory

The XMS (Extended Memory Specification) for extending the amount of memory available to PC applications using 80286 protected mode.

Extension

The last part of an MS-DOS filename which can be used to specify the type of file. It consists of a period and up to three letters; for example, `.BAT`.

FDHD

An alternative name for the Macintosh SuperDrive.

Frame

A unit of information that is transmitted over the network. It is also referred to as a message packet. Your frame structure can differ depending on the frame type in use. You should ensure that your computer is configured for the appropriate frame type.

Frame type

A variation of a protocol, defining the internal structure of a packet. There are several frame types supported by SoftNode. When setting up SoftNode you need to choose the correct one for your network.

Gateway

A program which separates and manages the communication between different types of networks, and translates the protocols they use. For example, the Ethernet Gateway can be used to connect a network using the AppleTalk protocol to a network using the IPX protocol. Sometimes the computer running the gateway program is also called a gateway.

Group

A collection of applications, accessories, or documents within the Windows Program Manager.

IEEE (or ISO) 802.3

A standard developed for Ethernet networks, defining the physical cabling and software protocols. See *Frame type*.

Internet

An internet is an interconnected group of networks. When written as Internet it refers specifically to the DARPA Internet.

IPX

The Novell communication protocol, standing for Inter-network Packet eXchange. It creates, maintains, and terminates the connections between network devices (such as computer file servers and routers). It also addresses and routes the outgoing data packets across the network.

ISO 9660 standard

The official term for the High Sierra standard format for CD-ROMs.

Local Area Network

A Local Area Network (or LAN) consists of computers and shared devices connected to a single network transmission cable in a limited area, usually a single building or section of a building.

LocalTalk

Apple Computer's connectivity product which consists of cables, connector modules, cable extenders, and other accessories. It uses the connection software and hardware built in to all Apple computers.

MS-DOS

Microsoft Disk Operating System; the system software and filing system used on IBM PC or compatible computers.

NDIS

Network Driver Interface Specification, a standard defined by Microsoft and 3Com. It is the media- and protocol-independent driver standard used by network operating systems such as LAN Manager.

Network drive

A general name for disk drives that are treated by the PC as being on a different computer. Network drives cannot be formatted or partitioned.

Network number

A number which identifies a network in an internet, so that data can be sent to the correct destination. AppleTalk, Ethernet, and Token Ring networks all have network numbers.

NetWare

Novell's operating system that runs on file servers and routers. It controls system resources and information processing on an entire network or internetwork.

NuBus

The standard expansion slot for Macintosh computers, which allows Token Ring or other cards to be added. Some Macintosh computers may require a PDS to NuBus adapter to allow them to accept NuBus cards.

ODI

Novell's Open Data-Link Interface. It supports media- and protocol-independent communications by providing a standard interface that allows multiple protocols to share a single network board without conflict. SoftNode includes ODI drivers for Ethernet, Token Ring, and AppleTalk.

ODINSUP

A Novell converter program which allows the use of NDIS client applications, such as Microsoft LAN Manager, with ODI drivers.

Packet

A unit of information that has been formatted for transmission on a network. A packet contains not only data but also its destination and source.

PDS

Processor Direct Slot. An expansion slot found in many Macintosh computers, the PDS provides direct connection to the processor. Some network cards are installed in the PDS rather than a NuBus slot.

Protocol

A set of procedural rules that permit the orderly exchange of information within and across a network. These rules govern the content, format, timing, sequencing, and error control of the messages being exchanged on a network.

RISC Reduced Instruction Set Computer. A microcomputer architecture designed with a simpler instruction set to allow faster execution speeds to be achieved.

Router Manages the exchange of data packets between network cabling systems (such as between LocalTalk and Ethernet). It interprets address information and routes messages to the appropriate computer.

SCSI Small Computer Systems Interface (pronounced 'scuzzy'), the industry standard for connecting peripheral devices to host computers. Most Macintosh computers have SCSI ports as standard.

SNAP Sub Network Access Protocol frame type. There are SNAP frame types for both Ethernet and Token Ring. They are extensions of the basic 802.3 and 802.2 frame types, allowing more addressing flexibility.

SuperDrive The dual-format 3.5-inch floppy disk drive provided on all recent Macintosh computers. It can read, write, and format both Macintosh disks and MS-DOS disks.

SVGA Super Video Graphics Array, an extension to VGA providing higher resolution and more colors.

SYSTEM.INI A Windows initialization file that provides information about the MS-DOS environment.

TCP/IP Transmission Control Protocol/Internet Protocol. A widely-used industry standard for connecting different types of computers. An internet is an interconnected set of networks.

Type A four-character code which identifies the type of document created by an application on the Macintosh. SoftWindows allows you to specify what type code is allocated to the files it creates.

Token Ring A network with a ring layout, where all network devices are connected in a daisy chain system and pass tokens from one attached device to another.

VGA Video Graphics Array, the most widely-accepted standard for PC graphics displays.

Volume An alternative name for a disk.

WIN.INI A Windows initialization file that allows you to customize your Windows environment.

Technical support

Insignia Solutions is committed to helping you get the most out of your software. As a registered customer of Insignia Solutions, you are entitled to free warranty support for your Insignia products.

The information below will be helpful if you need to call for technical assistance. Please take a moment to fill this out:

Software name: _____

Version: _____

Serial number: _____

Computer model: _____

RAM (Mbytes): _____

Operating system: _____

Before you call technical support, please follow this pre-call checklist so our support technicians can help you more quickly and efficiently:

- Consult the documentation included with your product. It should provide answers to many of your questions.
- Have your software serial number available when you call.
- Let the technician know whether the program worked correctly prior to the problem you are experiencing, and whether you made any changes to your computer environment.
- If possible, be prepared to reproduce the sequence of steps or use the application that demonstrates the problem.
- Make a note of any error messages that appeared.

Technical support contacts

USA/Canada

Phone:	(415) 694-7694
Fax:	(415) 694-3705
AppleLink:	INSIGNIA.TCH
Internet:	mactech@isinc.insignia.com
World Wide Web:	http://WWW.insignia.com/

Technical support is available from 6am through 5pm, PST, Monday through Friday.

Europe, Middle East, Africa and CIS countries

Phone:	+44 131 451 6900
Fax:	+44 131 451 6910
Internet:	support@isltd.insignia.com

Technical support is available from 9am through 5pm, UK time, Monday through Friday.

In other countries support is provided through the authorized dealer in your country.

Software registration

Software registration is the key to receiving the full benefits of Insignia Solutions' customer services. Please be sure to run the SoftWindows Registration program, or fill out and mail the Warranty Registration Card.

Periodically, Insignia Solutions will make available upgrade/update versions of certain programs at a modest charge to registered customers. As a registered customer, Insignia will notify you of upgrades/updates.

As a registered user, you will have full access to Insignia's customer service and technical support organizations.

Media replacement

Replacement disks or CD-ROMs are available only if your Warranty Registration Card is on file. A charge applies in some circumstances.

Please contact our technical support organization to verify defective media. For information on how to contact us, refer to *Technical support*, page 189.

Product upgrades

To upgrade your Insignia product, contact our sales and customer services representatives at the numbers listed below:

USA/Canada

Phone:	800-848-7677 or (415) 694-7677
Fax:	(415) 694-3705
Internet:	maccs@isinc.insignia.com

Customer service is available from 6am through 5pm, PST, Monday through Friday.

Europe, Middle East, Africa and CIS countries

Phone numbers:

UK:	0800 667706
France:	0590 8201
Germany:	0130 81 40 90
Italy:	1678 77164
Netherlands:	060 225531
Sweden:	020 791480
Rest of region:	+44 131 458 6849
Fax:	+44 131 451 6981
Internet:	info@isltd.insignia.com

or contact your local software supplier.

Customer service is available from 9am through 5pm, UK time, Monday through Friday.

In other countries customer service is provided through the authorized dealer in your country.

Index

A

A: drive, setting up 60, 88
abbreviations vi
AccessPC 61
Apple Guide, using 36
AppleScript, using 155
AppleTalk network number 146
application (scripting keyword) 159
Application Memory Setup options 7
application memory size
  changing 68
  increasing 94
ATALK (MS-DOS command) 49
ATALK.BAT file 143
Auto-Send... (File menu) 52, 105
AUTOEXEC.BAT file 126, 132
  listing 126

B

B: drive, setting up 60, 88
Bad command or filename message 116
Balloon Help 38
Banyan VINES 131
batch files 143
best performance installation 8
Best Window Position (Setup menu) 35, 101
boot sound, switching off 102
booting SoftWindows 107

C

C: drive
  creating 63, 92
  expanding 62
C: drive *(continued)*
  setting up 61, 91
C:\> prompt 115
Cancel (File menu) 52, 105
CD (MS-DOS command) 121
CD-ROMs
  ejecting 82
  listing files 67
  running applications 67
  setting up 67
  troubleshooting 166
CHKDSK (MS-DOS command) 120
Clear (Edit menu) 79
COMCHECK (MS-DOS command) 146
CONFIG.SYS file 126, 132
  listing 126
configuration files
  AUTOEXEC.BAT 132
  CONFIG.SYS 132
  NET.CFG 132, 133, 134, 141, 154
  PROTOCOL.INI 132
conventions vi
Copy (Edit menu) 80
COPY (MS-DOS command) 121
copy (scripting keyword) 161
copy-protection devices 74
copying MS-DOS files and directories 125
copying text 41
  from the MS-DOS window 41
Create Bootable option 64
customized installation 15
Cut (Edit menu) 79

D

D: drive
  creating 64, 92
  expanding 62
  removing 62, 92
  setting up 61, 91
Danish characters 75, 104
data files, sharing 19
data size (scripting keyword) 159
DEC PATHWORKS 131
DEL (MS-DOS command) 121
DeltaCache 69, 95
  effect on performance 78
DELTREE (MS-DOS command) 121
demonstration version 8
DIR (MS-DOS command) 122
Disable 487... (Setup menu) 81
disks, formatting 122
DISPLAY NETWORKS (MS-DOS command) 146
dongles 74
DOS. *See* MS-DOS

E

E: drive, setting up 85
Easy Install dialog box 6
EDIT (MS-DOS command) 127
Eject menu 82
ejecting
  a CD-ROM 82
  a floppy disk 82
Emulate PC Mouse (Setup menu) 33, 83
Enable 487... (Setup menu) 81
Epson LQ-2500 emulation 96
Epson LQ-2500 printing option 54
error messages
  floppy disk drives 176
  gateways 179
  hard disk files 174
  licensing 171
  memory 175
  MS-DOS errors 169
  running SoftWindows 173
  serial ports 177
  shared drives 170, 176
ETHER (MS-DOS command) 49
ETHER.BAT file 143
Ethernet Gateway control panel 144
exiting from SoftWindows 106
expanding hard disk files 62
Extended memory 68

F

F: drive, setting up 67
Faster Palette Changes (Setup menu) 101
fax response service 133
FDISK (MS-DOS command) 122
floppy disk drives 59
  Empty option 88
  error messages 176
  setting up 60
  SuperDrive option 88
floppy disks
  ejecting 82
  troubleshooting 165
Flow Control 99

foreign keyboard character set 123
FORMAT (MS-DOS command) 122
formatting an MS-DOS disk 122
frame types 142
full screen, using 35

G

gateway control panels 129
Gateway Finder utility 147
gateways 144
  AppleTalk network number 146
  configuring 145
  error messages 179
  Ethernet network number 146
  finding 147
  Frame type 147
  installing 145
  running 147
  selecting 147
  Token Ring network number 146
get (scripting keyword) 158
glossary 183
group icon 46

H

handshaking 73, 99
hard disk drives 59
  setting up 61
Hard Disk Expander utility 62
hard disk files 61
  creating 7, 64, 92
  error messages 174
  expanding 62
hard disk files *(continued)*
  removing 62
  setting up 90
  upgrading 17
hard disks, troubleshooting 165
HD Expander utility 62
HDData file 10
help
  Apple Guide 36
  balloon 38
  in Windows 48
HELP (MS-DOS command) 123
Hide Clipboard (Edit menu) 110

I

installation 5
  best performance 8
  creating a hard disk file 7, 63
  customize option 15
  disk space required 5
  files installed 10
  minimum memory 8
  multi-user pack 19
  upgrading a hard disk file 17
installing MS-DOS applications 118
installing Windows applications 26
international usage 75
introduction 1
Inverse Video (Setup menu) 101

K

key (scripting keyword) 162
KEYB (MS-DOS command) 75, 123

KEYBOARD.SYS file 75
keyboards
setting up for MS-DOS 75
setting up for Windows 76
troubleshooting 166
using 39

L

LAN Manager 131, 151
disabling 154
installing 151
running 154
using a batch file 152
LAN Workplace for DOS 131
LANtastic for NetWare 131
LASTDRIVE setting 144
left PC mouse button 39
licensing, error messages 171
Load Settings... (File menu) 84
LocalTalk gateway 144
LOGIN (MS-DOS command) 50
login drive 144
LQ-2500 emulation options
Auto Line-Feed (LF) 97
Condensed 97
Country 97
Left Margin 98
Mono Spaced Font 98
Page Length 98
Pitch 97
Proportional Font 98
Right Margin 98

M

Mac Mouse (Setup menu) 83
Mac/PC Shared Folders... (Setup menu) 65, 85
Macintosh folder, using as drive E: 65
MacIPX
configuring 148
installing 148
using 148
MacTCP 138
memory
changing 69
error messages 175
setting up 68
troubleshooting 166
menu commands 79
Microsoft Bus Mouse 83
Microsoft LAN Manager 129
Microsoft Windows. *See* Windows
minimum memory installation 8
MKDIR (MD) (MS-DOS command) 123
MODE (MS-DOS command) 56
modem port 99
modems
interfacing 73
using 72
using to register SoftWindows 13
mouse
emulating 83
right button 39
troubleshooting 166
using 39
mouse pointer, in Windows 33

MS-DOS
basics 115
configuration 125
information 115
MS-DOS applications
disk space requirements 120
installing 118
printing from 55
running 118
MS-DOS commands 120
ATALK 49
CD 121
CHKDSK 120
COMCHECK 146
COPY 121
DEL 121
DELTREE 121
DIR 122
DISPLAY NETWORKS 146
EDIT 127
ETHER 49
FDISK 122
FORMAT 122
HELP 123
KEYB 123
LOGIN 50
MKDIR (MD) 123
MODE 56
NETX 144
ODINSUP 137, 151
PRINT 124
RMDIR (RD) 124
SLIST 50, 143
MS-DOS commands *(continued)*
SYSCON 50
TOKEN 49
TYPE 124
UNDOLAN 132
USECD 67
WIN 33
XCOPY 125
MS-DOS directories
cataloguing 122
creating 123
removing 124
MS-DOS editor 127
configuring 128
running 127
using on a black and white Macintosh 128
MS-DOS errors 169
MS-DOS files
AUTOEXEC.BAT 126, 132
CONFIG.SYS 126, 132
copying 121
deleting 121
displaying 124
editing 127
filenames 66
printing 124
using with Macintosh applications 85
MS-DOS prompt 115
MS-DOS window 9
changing size 35
copying and pasting text 41
displaying 32
moving 35

MS-DOS window *(continued)*
troubleshooting 167
multi-user pack, installing 19

N

NDIS networking software
configuring 137
starting 138
NDIS networking standard 137
NET.CFG file 132, 133, 134, 141, 154
Link Driver 135
Link Support 134
NetWare 129, 131
configuring 142
running 143
setting up 141
using 141
using on LocalTalk 144
NetWare command, logout 50
NetWare file server
logging in 50
logging out 50
testing 50
networking packages 129, 130
batch files 132
configuration files 131
installing and running 132
introduction 3
login drive 144
starting 136
stopping 136
NETX (MS-DOS command) 144
Norwegian characters 75, 104
Novell TCP/IP 138
Num Lock indicator 32

O

ODI networking software
configuring 133
troubleshooting 137
using 133
ODI networking standard 133
ODINSUP (MS-DOS command) 137, 151
Open Datalink Interface 130
outputting to a file 100
overview 1

P

Page Setup... (File menu) 86
Paste (Edit menu) 87
paste (scripting keyword) 162
pasting text 41
into the MS-DOS window 41
PC Floppy Disks... (Setup menu) 60, 88
PC Hard Disks... (Setup menu) 61, 62, 64, 90
PC Memory... (Setup menu) 69, 93
PC NFS 131
PC Printer Port... (Setup menu) 53, 54, 55, 96
PC Serial Ports... (Setup menu) 56, 72, 99
PC Video (Setup menu) 101
PC/AT 101-key keyboard 39
PC/TCP 131
performance improvements 78
personalizing SoftWindows 8
PostScript printer 96

PostScript printing 53, 56
Preferences... (File menu) 102
PRINT (MS-DOS command) 124
printer port 99
printers, troubleshooting 167
printing 51
  automatically 52
  Epson LQ-2500 96
  from MS-DOS 55, 56
  from Windows 30, 53, 54
  international 77
  manually 52
  MS-DOS text files 124
  PostScript 53, 56, 96
  setting up 86
  to a serial printer 56, 73
  to a text file 99, 100
Printouts (File menu) 105
PROTOCOL.INI file 132

Q

Quit (File menu) 106
quit (scripting keyword) 158

R

rebooting SoftWindows 107
registering SoftWindows 11
  using a modem 13
  using a printer 14
removing network packages 132
requirements 3
Reset SoftWindows... (Setup menu) 107
resetting SoftWindows 58
restoring the Macintosh mouse 83
right PC mouse button 39
RMDIR (RD) (MS-DOS command) 124
run (scripting keyword) 158
running SoftWindows 9, 32
  error messages 173
running Windows 9, 33
running Windows applications 28

S

Save Settings... (File menu) 108
scripting 155
  core suite 158
  executing a command 155
  miscellaneous suite 161
  quitting from SoftWindows 157
  reading information from MS-DOS 156
  reference 158
  required suite 158
  running SoftWindows 155
  SoftWindows suite 162
  zooming the SoftWindows MS-DOS window 157
scripting keywords
  application 159
  copy 161
  data size 159
  get 158
  key 162
  paste 162
  quit 158
  run 158
  selection 161

scripting keywords *(continued)*
set 159
window 160
write 162
Scroll Lock indicator 32
Select All (Edit menu) 109
selection (scripting keyword) 161
Send to Printer (File menu) 52, 105
serial communications
data rates 72
flow control 73
limitations 74
serial devices
interfacing 72
troubleshooting 167
serial ports 99
error messages 177
serial printer
printing to 56
setting up 73
set (scripting keyword) 159
settings
loading 84
saving 108
shared folders 59
error messages 170
setting up 85
sharing SoftWindows data files 19
Show Clipboard (Edit menu) 110
SLIST (MS-DOS command) 50, 143
SmartCopy icon 42
SmartCopy utility 80, 87
SoftNode Gateway... (Setup menu) 111, 147
SoftNode network drivers 129
software registration 191
SoftWindows Hard Disk File C 7, 10
SoftWindows Prefs file 102
sound
preferences 102
switching off 102
specification 181
StartUp group 29
support 189
SYSCON (MS-DOS command) 50

T

Task List 48
technical support 189
TOKEN (MS-DOS command) 49
Token Ring Gateway control panel 144
TOKEN.BAT file 143
troubleshooting 165
CD-ROMs 166
floppy disks 165
hard disks 165
keyboards 166
memory 166
mouse 166
MS-DOS window 167
ODI system 137
printers 167
serial devices 167
Windows 168
tutorial 25
TYPE (MS-DOS command) 124

U

Undo (Edit menu) 79
UNDOLAN (MS-DOS command) 132
upgrading an existing hard disk file 17
USECD (MS-DOS command) 67
utilities
  Gateway Finder 147
  Hard Disk Expander 62

W

Wait for Send (File menu) 105
WIN (MS-DOS command) 33
Win Install 1 disk 6
WIN.INI 46
window (scripting keyword) 160
Windows
  basics 46
  copying and pasting 80, 87
  Default Printer 53, 54
  exiting 34
  File Manager 46
  group icon 46
  Help 48
  information about 48
  printing 53
  Program Manager 46
  running 9, 33
  setting up keyboards 76
  troubleshooting 168
Windows applications
  installing 26, 47
  printing from 30, 54
Windows applications *(continued)*
  running 28, 47
  starting automatically 29
  switching between 48
Windows desktop
  changing the size 112
  effect on performance 78
  moving 35
  number of colors 8
  setting up 70
  size 8
  specifying size 71
  specifying the number of colors 71, 113
Windows Desktop... (Setup menu) 70, 112
Windows for Workgroups 20, 129, 131
  setting up 20
Windows NT advanced servers 129
Windows Setup window 70, 112
WinPost 25
  creating a new note 28
  exiting 29
  installing 26
  printing a note 30
  running 28
WinSleuth Pro 2
Winsock 138
WINSOCK.DLL 139
World Wide Web page 133
write (scripting keyword) 162

X

XCOPY (MS-DOS command) 125

INSIGNIA SOLUTIONS END USER SOFTWARE LICENSE AGREEMENT

BEFORE OPENING THIS SOFTWARE PROGRAM PACKAGE ("PROGRAM"), YOU SHOULD CAREFULLY READ THE FOLLOWING TERMS AND CONDITIONS. BY OPENING THE MEDIA AND USING THE PROGRAM YOU AGREE TO BECOME BOUND BY THE TERMS AND CONDITIONS OF THIS AGREEMENT, WHICH INCLUDES THE SOFTWARE LICENSE AND LIMITED WARRANTY. INSIGNIA'S CONSENT TO YOUR USE OF THIS PROGRAM IS SUBJECT TO YOUR AGREEMENT; IF YOU DO NOT AGREE WITH THESE TERMS AND CONDITIONS, YOU SHOULD PROMPTLY RETURN THIS PACKAGE UNOPENED AND YOUR MONEY WILL BE REFUNDED.

Insignia Solutions ("Insignia") provides the Program and licenses its use. You assume responsibility for the installation, use and results obtained from the Program.

LICENSE

a. You may use the Program as follows:

(1) (SINGLE USER - STANDALONE) You may use the Program on a single computer. The Program is considered "in use" on a computer when it is loaded into temporary memory (i.e., RAM) or installed into permanent memory (e.g., hard disk, CD-ROM, or other storage device of that computer).

(2) (SINGLE USER - NETWORK) You may use the Program on a single terminal on a LICENSED COMPUTER NETWORK. A computer network is any combination of two or more computers or terminals that are electronically linked and capable of sharing the use of a single software program. A LICENSED COMPUTER NETWORK is a computer network for which you have paid for and dedicated one (1) Program for each computer or terminal on the network.

(3) (CONCURRENT USER - LICENSED SITE) If you have notified Insignia and are invoiced for the use of the Program at a single physical site (LICENSED SITE) by more than one concurrent user, each user at such site who agrees to be bound by this Agreement up to the number of users authorized by Insignia may use the Program concurrently.

You will distribute a copy of this Agreement to each licensed user and each user agrees to be bound by this Agreement by using the Program.

b. You may make one copy of the Program for backup purposes only, provided that you reproduce all copyright and other proprietary notices that are on the original copy of the Program provided to you. Any portion of the Program merged into another program will continue to be subject to the terms and conditions of this Agreement;

c. You may transfer the Program and license to another party if the other party agrees to accept the terms and conditions of this Agreement, provided that you reproduce all copyright and other proprietary notices that are on the original copy of the Program provided to you. Any portion of the Program merged into another program will continue to be subject to the terms and conditions of this Agreement. If you transfer the Program, you must at the same time either transfer to the same party all copies, whether in printed or machine-readable form or destroy any copies not transferred.

d. You may physically transfer the Program: (i) from one single computer to another provided that the Program is used on only the number of single CPU computers permitted pursuant to paragraph a of this Agreement; (ii) from one terminal to another within a LICENSED COMPUTER NETWORK as long as the number of users on the LICENSED COMPUTER NETWORK does not exceed the number of Program copies paid for by you; or (iii) from one terminal to another within a LICENSED SITE as long as the number of users within the LICENSED SITE does not exceed the number so licensed pursuant to paragraph a of this Agreement. You may not electronically transfer the Program from one computer to another except over a LICENSED COMPUTER NETWORK or within a LICENSED SITE. You may not distribute copies of the Program or accompanying documentary materials to others. You may not translate, reverse engineer, decompile, disassemble, or create derivative works based on the Program. You may not translate or create derivative works based on the written materials without prior written consent of Insignia.

e. Insignia agrees to make available to you reasonable information that Insignia has which is necessary to achieve interoperability of the Program with other operating systems and/or platforms and no exception to these terms and conditions shall apply for the purpose of the development of interoperable software.

f. You acknowledge that the Program is subject to restrictions and controls imposed by the United States Export Administration Act (the "Act") and the regulations thereunder. You agree and certify that the Program licensed hereunder will not be acquired, shipped, transferred or reexported, directly or indirectly, into any country prohibited by the Act and the regulations thereunder or will not be used for any purpose prohibited by the same.

g. The Program is provided with RESTRICTED RIGHTS. Use, duplication, or disclosure by the Government is subject to restrictions as set forth in subparagraph (c) (1) (ii) of The Rights in Technical Data and Computer Software clause at DFARS 252.227-7013 or in subparagraphs (c) (1) and (2) of the Commercial Computer Software - Restricted Rights clause at 48 CFR 52.227-19, as applicable.

YOU MAY NOT USE, COPY, MODIFY, SUBLICENSE, ASSIGN OR TRANSFER THIS LICENSE, ANY RIGHTS, DUTIES OR OBLIGATIONS HEREUNDER, THE PROGRAM, IN WHOLE OR IN PART, EXCEPT AS EXPRESSLY PROVIDED FOR IN THIS LICENSE, AND, IF YOU ATTEMPT TO DO SO OTHERWISE, YOUR LICENSE IS AUTOMATICALLY TERMINATED.

TERM

The license is effective until terminated. You may terminate it at any time by destroying the Program together with all copies. It will also terminate upon conditions set forth elsewhere in this Agreement, or if you fail to comply with any term or condition of this Agreement. You agree upon such termination to destroy the Program together with all copies.

LIMITED WARRANTY

THE PROGRAM IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THE ENTIRE RISK AS TO THE QUALITY AND PERFORMANCE OF THE PROGRAM IS WITH YOU. SHOULD THE PROGRAM PROVE DEFECTIVE, YOU (AND NOT INSIGNIA, ITS AUTHORIZED DEALERS OR DISTRIBUTORS) ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICING, REPAIR OR CORRECTION.

SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION.

Insignia does not warrant that the functions contained in the Program will meet your requirements or that the operation of the Program will be uninterrupted or error free. However, Insignia warrants the media on which the Program is furnished to be free from defects in materials and workmanship under normal use for a period of thirty days from the date of delivery to you.

LIMITATIONS OF REMEDIES

Insignia's entire liability and your exclusive remedy shall be:

1. The replacement of any media not meeting Insignia's "Limited Warranty" and which is returned to Insignia or an authorized Insignia dealer with a copy of your receipt; or
2. If Insignia or the dealer is unable to deliver replacement media which is free of defects in materials or workmanship, you may terminate this Agreement by returning the Program and your money will be refunded.

IN NO EVENT WILL INSIGNIA OR ITS SUPPLIERS BE LIABLE TO YOU FOR ANY DAMAGES, INCLUDING ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE SUCH PROGRAM, EVEN IF INSIGNIA, ITS SUPPLIERS OR ANY AUTHORIZED INSIGNIA DEALER OR DISTRIBUTOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

SOME JURISDICTIONS DO NOT ALLOW THE LIMITATION OR EXCLUSION OF LIABILITY FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

GENERAL

This Agreement is governed by the laws of the State of California. Should you have any questions concerning this Agreement, you may contact Insignia by writing to Insignia Solutions, Legal Department, 1300 Charleston Road, Mountain View, California 94043, U.S.A.

YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT, UNDERSTAND IT, AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS. YOU FURTHER AGREE THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN YOU AND INSIGNIA AND THAT IT SUPERSEDES ANY PROPOSAL OR PRIOR AGREEMENT, ORAL OR WRITTEN, AND ANY OTHER COMMUNICATIONS BETWEEN YOU AND INSIGNIA RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

INSIGNIA SOLUTIONS INTERNATIONAL LIMITED SOFTWARE USER LICENCE AGREEMENT

BEFORE OPENING THIS SOFTWARE PROGRAM PACKAGE ("PROGRAM"), YOU SHOULD CAREFULLY READ THE FOLLOWING TERMS AND CONDITIONS. BY OPENING THE MEDIA AND USING THE PROGRAM YOU AGREE TO BECOME BOUND BY THE TERMS AND CONDITIONS OF THIS AGREEMENT, WHICH INCLUDES THE SOFTWARE LICENCE AND LIMITED WARRANTY. INSIGNIA'S CONSENT TO YOUR USE OF THIS PROGRAM IS SUBJECT TO YOUR AGREEMENT; IF YOU DO NOT AGREE WITH THESE TERMS AND CONDITIONS, YOU SHOULD PROMPTLY RETURN THIS PACKAGE UNOPENED AND YOUR MONEY WILL BE REFUNDED.

Insignia Solutions International Limited ("Insignia") provides the Program and licenses its use. You assume responsibility for the installation, use and results obtained from the Program.

LICENCE

a. You may use the Program as follows:

(1) (SINGLE USER - STANDALONE) You may use the Program on a single computer. The Program is considered "in use" on a computer when it is loaded into temporary memory (i.e., RAM) or installed into permanent memory (e.g., hard disk, CD-ROM, or other storage device of that computer).

(2) (SINGLE USER - NETWORK) You may use the Program on a single terminal on a LICENSED COMPUTER NETWORK. A computer network is any combination of two or more computers or terminals that are electronically linked and capable of sharing the use of a single software program. A LICENSED COMPUTER NETWORK is a computer network for which you have paid for and dedicated one (1) Program for each computer or terminal on the network.

(3) (CONCURRENT USER - LICENSED SITE) If you have notified Insignia and are invoiced for the use of the Program at a single physical site (LICENSED SITE) by more than one concurrent user, each user at such site who agrees to be bound by this Agreement up to the number of users authorized by Insignia may use the Program concurrently.

You will distribute a copy of this Agreement to each licensed user and each user agrees to be bound by this Agreement by using the Program.

b. You may make one copy of the Program for backup purposes only, provided that you reproduce all copyright and other proprietary notices that are on the original copy of the Program provided to you. Any portion of the Program merged into another program will continue to be subject to the terms and conditions of this Agreement;

c. You may transfer the Program and license to another party if the other party agrees to accept the terms and conditions of this Agreement, provided that you reproduce all copyright and other proprietary notices that are on the original copy of the Program provided to you. Any portion of the Program merged into another program will continue to be subject to the terms and conditions of this Agreement. If you transfer the Program, you must at the same time either transfer to the same party all copies, whether in printed or machine-readable form or destroy any copies not transferred.

d. You may physically transfer the Program: (i) from one single computer to another provided that the Program is used on only the number of single CPU computers permitted pursuant to paragraph a of this Agreement; (ii) from one terminal to another within a LICENSED COMPUTER NETWORK as long as the number of users on the LICENSED COMPUTER NETWORK does not exceed the number of Program copies paid for by you; or (iii) from one terminal to another within a LICENSED SITE as long as the number of users within the LICENSED SITE does not exceed the number so licensed pursuant to paragraph a of this Agreement. You may not electronically transfer the Program from one computer to another except over a LICENSED COMPUTER NETWORK or within a LICENSED SITE. You may not distribute copies of the Program or accompanying documentary materials to others. You may not translate, reverse engineer, decompile, disassemble, or create derivative works based on the Program. You may not translate or create derivative works based on the written materials without prior written consent of Insignia.

Insignia agrees to make available to you reasonable information that Insignia has which is necessary to achieve interoperability of the Program with other operating systems and/or platforms and that no exception to these terms and conditions shall apply for the purpose of the development of interoperable software.

YOU MAY NOT USE, COPY, MODIFY, SUB-LICENSE, ASSIGN OR TRANSFER THIS LICENCE, ANY RIGHTS, DUTIES OR OBLIGATIONS HEREUNDER, THE PROGRAM, IN WHOLE OR IN PART, EXCEPT AS EXPRESSLY PROVIDED FOR IN THIS LICENCE, AND, IF YOU ATTEMPT TO DO SO OTHERWISE, YOUR LICENCE IS AUTOMATICALLY TERMINATED.

TERM

The licence is effective until terminated. You may terminate it at any time by destroying the Program and all accompanying documentary materials together with all copies. It will also terminate upon conditions set forth elsewhere in this Agreement, or if you fail to comply with any term or condition of this Agreement. You agree upon such termination to destroy the Program and all accompanying documentary materials together with all copies including any copies of the Program stored on the hard disk of any computer under your control.

LIMITED WARRANTY

Insignia does not warrant that the functions contained in the Program will meet your requirements or that the operation of the Program will be uninterrupted or error free.

However, Insignia warrants the diskette(s) or cassette(s) on which the Program is furnished to be free from defects in materials and workmanship under normal use for a period of thirty days from the date of delivery to you.

The express terms of this Agreement are in lieu of all warranties, conditions, undertakings, terms and obligations implied by statute, common law, trade usage, course of dealing or otherwise, all of which are hereby excluded to the fullest extent permitted by law.

Insignia's entire liability and your exclusive remedy shall be:

1. the replacement of any diskette or cassette not meeting Insignia's "Limited Warranty" and which is returned to Insignia or an authorised Insignia dealer with a copy of your receipt; or

2. if Insignia or the dealer is unable to deliver a replacement diskette or cassette which is free of defects in materials or workmanship, you may terminate this Agreement by returning the Program and your money will be refunded.

The above represents your sole remedies for any breach of the warranty given by Insignia's "Limited Warranty", which warranty is given only to the original user of the Program.

IN NO EVENT WILL INSIGNIA BE LIABLE TO YOU FOR ANY DAMAGES, INCLUDING ANY LOST PROFITS, LOST SAVINGS OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR INABILITY TO USE THE PROGRAM EVEN IF INSIGNIA, ITS SUPPLIERS OR ANY AUTHORISED INSIGNIA DEALER OR DISTRIBUTOR HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, OR FOR ANY CLAIM BY ANY OTHER PARTY.

GENERAL

This Agreement is governed by the laws of England and Wales. Should you have any questions concerning this Agreement, you may contact Insignia by writing to Insignia Solutions International Limited, Legal Department, [Kingsmead Business Park, London Road, High Wycombe, Buckinghamshire, HP11 1JU, United Kingdom].

YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT, UNDERSTAND IT AND AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS. YOU FURTHER AGREE THAT IT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE AGREEMENT BETWEEN YOU AND INSIGNIA AND THAT IT SUPERSEDES ANY PROPOSAL OR PRIOR AGREEMENT, ORAL OR WRITTEN, AND ANY OTHER COMMUNICATIONS BETWEEN YOU AND INSIGNIA RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

ISN'T IT TIME YOU GOT CONNECTED?

GET ONLINE—WITH COMPUSERVE®!

TALK TO US!

Connect with Insignia Solutions through CompuServe and get easy access to our product information and solid technical support! The information and features immediately available to you are:

- **Technical assistance, patches and other technical solutions**
- **New product information**
- **News about product updates and upgrades**
- **Insignia Solutions' information library**
- **Press releases**
- **Interaction with other Insignia Solutions customers**
- **Special offers**

But that's not all you'll gain if you connect now!

COMPUSERVE IS MUCH MORE...

CompuServe's variety of services add a new dimension to business activities and can enrich your personal interests.

- INVEST WISELY. Speed stock purchases and sales with convenient electronic brokerage services. View stock trends online, research investment possibilities, or transfer data from CompuServe into your own spreadsheets.
- PLAN YOUR TRAVEL. Compare airline schedules and fares on CompuServe. Find the least expensive flight, or the best time to fly. Book your airline tickets online, or pass information on to your travel agent.
- DO YOUR HOMEWORK. Turn hours of research into minutes online, with hundreds of national and international databases representing diverse specializations. Read abstracts and full articles directly online.
- BE INFORMED. Turn to CompuServe's online news service for daily news from the Associated Press, United Press International, The Washington Post, Reuters and other reputable sources.

GO FOR IT!

Now's the time! If you aren't already connected, fill out and return the card below or call the appropriate number. ***Be sure to ask for Representative #193!*** If you're already a CompuServe member, enter GO MACDVEN at any ! prompt to access Insignia Solutions' Support Section.

CATCH THE WAIVE!

Get connected now ***and your introductory membership fee will be waived!*** In addition you get these great benefits:

- **One month of FREE basic service**
- **A private User ID number and password**
- **A complimentary subscription to CompuServe Magazine**
- **A $15 credit to visit Insignia Solutions' section or any extended or premium services!**

☐ YES! PLEASE CONNECT ME!

INSIGNIA SOLUTIONS

Fill in and return this response card. Mail to: CompuServe, Dept. 193, 5000 Arlington Centre Blvd., PO Box 20212, Columbus, OH 43220-9988. ***Or for faster service call CompuServe!***

United States and Canada	**800-524-3388**	**United Kingdom**	**0800-289378**
Europe (excluding UK)	**+44 272 255111**	**International**	**614-457-0802**

Name _____

Address _____

City _____ State _____

Zip/Postal Code _____

Country _____

Telephone _____

Company Name _____

Microcomputer used: ☐ IBM or Compatible ☐ Macintosh ☐ Other _____

For more information on all Insignia Solutions products and services, call 1-800-848-7677.
Or contact our toll-free Fax Back Service at 1-800-876-3872.
In Europe, call +44 131 458 6849, or fax us at +44 131 451 6981.

Insignia Solutions 1300 Charleston Road, Mountain View, CA 94043 (415) 335-7100 • Fax (415) 694-3705
Insignia Solutions Kingsmead Business Park, London Road, High Wycombe, Buckinghamshire, HP11 1JU, UK Phone +44 131 458 6849 • Fax +44 131 451 6981

Insignia and Insignia Solutions are registered trademarks of Insignia Solutions Inc. SoftWindows is a trademark used under license. Microsoft, Windows and MS-DOS are registered trademarks of Microsoft Corporation. Mac, the Mac OS logo, Power Mac and Power Macintosh are trademarks, and Apple and Macintosh are registered trademarks of Apple Computer, Inc. All other trademarks are the property of their respective holders. © 1995 Insignia Solutions Inc. All rights reserved. Specifications subject to change without notice.

102-065-01